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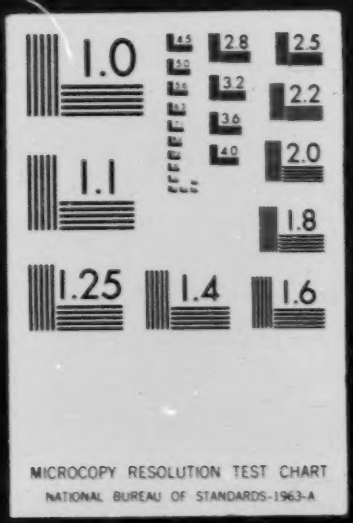

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ABSTRACT

Palauan is a relatively undescribed Austronesian language. This dissertation is an attempt to provide an account of the affixes which Palauan verbs can take, since there are complexities associated with almost every affix, with regard to both its phonological form and its syntactic and semantic function. In order to generalize about the verb forms, it is necessary to investigate the phonological system of the language in order to establish criteria for recognizing the same verb base in the environment of different verb bases. The underlying forms of the morphemes are discussed in chapter 2, and chapter 3 gives an outline of phonological rules mostly on the basis of evidence from the noun alternations, which are also needed for the analysis of the verbs. This is an essential preliminary for identifying the idiosyncratic phonological properties of several of the verb affixes. The affixes are discussed in chapters 4-7, grouped according to syntactic function. An attempt is made to integrate the description of the phonological processes with that of the syntactic function of the affixes, in order to achieve a consistent overall view of the phonological and syntactic phenomena relevant to Palauan verbs. (Author/LG)

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THE PHONOLOGY AND SYNTAX OF PALAUAN VERB AFFIXES

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF HAWAII IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

IN LINGUISTICS

AUGUST 1972

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ABSTRACT

Palauan is a relatively undescribed Austronesian language. This dissertation is an attempt to provide a reasonably thorough account of the affixes which Palauan verbs can take. There are complexities associated with almost every affix, with regard both to its phonological form and its syntactic and semantic function. This area has not been treated adequately in the few available descriptions of the language. Viewing the data from a generative viewpoint enables us to generalize in a maximally natural way.

It is necessary to investigate the phonological system of the language in order to establish criteria for recognizing the same verb base in the environment of different affixes and for recognizing the same affix in the environment of different verb bases. Palauan phonology is unusually complex for an Austronesian language. There are several related rules which reduce and delete unstressed vowels and vowels in the environment of a glide. Stress is penultimate, and whether or not a verb contains a suffix will effect the placement of stress and the subsequent reduction or deletion of the unstressed vowels.

The underlying forms of the morphemes are discussed in Chapter II, and Chapter III gives an outline sketch of phonological rules on the basis of evidence mostly

from the noun alternations, but which are also needed for the analysis of the verbs. This is an essential preliminary to recognizing the idiosyncratic phonological properties which several of the verb affixes have.

The affixes are discussed in turn in Chapters IV-VII; they are grouped by syntactic function. Chapter IV deals with the stative affixes as well as the verbs which are inherently stative. The major stative affixes are the resultative stative /-l-/ and the anticipative stative /-Vl/ or /-alV]/. The symbol V is used for a vowel whose quality is unknown. The form /-Vl/ of the anticipative affix is found to have important consequences for the underlying forms of the bases, since it is the only environment in which the vowel in the final syllable of a CVCVC base will occur.

Verbs which are non-stative are discussed in Chapter V; they must take the verb marker /mV-/. This affix is difficult to identify since it occurs in so many different phonological shapes, but they can be accounted for by means of some of the regular phonological rules as well as some idiosyncratic properties of this affix, for example, the fact that it metathesizes with the initial consonant of the base in many cases. Transitive verbs marked just with this affix occur in ergative sentences. When the Agent NP is the subject the verb must also be marked for either progressive or perfective aspect. This marking is

also phonologically odd; some historical explanations are offered.

There are two causative affixes, /wV-/ and /bVk-/, which are discussed in Chapter VI. Generally they do not contrast on a base, but some cases where they do are given. The reciprocal affix /kai-/ is the subject of Chapter VII; it functions to make explicit a symmetric relation between the individuals designated by the subject NP. This particular analysis is applicable to the reciprocal construction in other languages also, it is hoped.

An attempt is made to integrate the description of the phonological processes with that of the syntactic functions of the affixes, in order to achieve a consistent overall view of the phonological and syntactic phenomena relevant to Palauan verbs.

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I. INTRODUCTION

Palauan is spoken by the approximately 13,000 inhabitants of the Palau islands in the Western Carolines of Micronesia. Previous work on the language is not extensive, and is couched entirely in the theoretical framework of structural linguistics. Capell [1950] is a reference grammar broad in scope but less detailed than the present work with respect to the varied ways in which the verbs surface in the language. Pätzold 1968, similarly, is comprehensive in scope but limited in its theoretical apparatus and in the extent of available data: the work was undertaken solely on the basis of written materials (see Dyen 1971). Flora 1969 and Carlson 1968 are adequate treatments of the taxonomic phonemes of Palauan, but we shall see that a generative approach allows a great many generalizations to be made about the phonological system of the language which are not statable in a taxonomic description. Carlson (MS a-f) leads the way to a generative analysis of the phonology by uncovering some underlying forms and phonological processes applying to both nouns and verbs. He does not, however, extend his findings to cover a large body of data nor integrate them with a description of the syntactic functions of the morphemes which he identifies.

No previous work succeeds in adequately explaining the different phonological shapes which Palauan verbs can

assume. Dyen (1971:248) suggests a mechanism for reconstructing 'morphophonemic formulas'; we shall adapt this method into the generative framework in order to account for the data in an explicit and natural way. A great many complexities are involved in identifying verb bases and affixes and in accounting for their phonological shape and syntactic function. Previous analysis of the language has uncovered many of the problems discussed in this work and hinted at solutions to them. This dissertation is intended to provide an analysis of the verb affixes of Palauan which is as complete as limitations of time and number of informants permit. All the data cited was elicited from Masaharu Tmodrang and Masa-Aki Emesiochel, both from the island of Babeldaob. It is hoped that the information presented will be approachable to linguists interested in Austronesian languages, and that it may contribute to the solution of a long-standing problem in the field: the genetic classification of Palauan.

The morphophonemics of Palauan is very complicated, and the verb morphophonemics has appeared especially impenetrable in the past. The relatively thorough investigation of the verb morphophonemics attempted here will hopefully serve as a basis for further work on the phonology of the language. Furthermore, the study of Palauan syntax also should be aided by my analysis of the function

of the morphemes present in a verb. Such a study is an essential preliminary to the investigation of the syntactic properties of sentence types not mentioned here (for example, questions and commands) as well as those involving complementation, relativization and other varieties of embedding.

The complex phonology of Palauan necessitates, in many instances, a prior understanding of the phonological rules in order to recognize the morphological components of a surface verb, and even to identify different occurrences of the same lexical item. Phonological information relating to the entire language is given in Chapters II and III, and each verbal affix or syntactic class of affixes is discussed in detail in the succeeding chapters. Some of the phonological processes identified and explained in Chapter III are crucial to recognizing the base form of a verb when in the environment of different affixes. For example, there is a complicated set of vowel reduction rules which interact with the stress assignment to produce surface alternations of very varied shape. In the following chapters it will be seen that some affixes have very idiosyncratic phonological properties; for example, the very common verb marker *ma-* often metathesizes with the initial consonant of the base to which it is affixed, and in this position may undergo further phonological rules. Recognition of the process

of metathesis as a property of just one affix enables us to account for almost all instances of the affix whereas previous descriptions (for example Pätzold 1968:69) state the surface facts but are unable to explain them in terms of phonological processes.

As suggested above, the verbal system of Palauan is morphologically complex; many affixes can be attached to a verb base for various syntactic purposes. Some of the affixes are illustrated in the following sentences, all of which contain the verb base /kal/ 'eat'. This verb base happens to be idiosyncratic in that the final l is deleted when it is word-final. The sentence is given first in broad phonetic transcription, then in morphophonemic form, showing underlying forms and morpheme boundaries. The particle a obligatorily introduces every phrase in slow speech. The abbreviation VM is for 'verb marker'. Morpheme boundaries are symbolized with - around infixes and with # elsewhere. The symbol V, which stands for a vowel whose exact nature cannot be determined, will be explained in Chapter II. An epenthetic ŋ is required following low vowels at the end of a sentence.

(1) a Droteo a məŋa a ŋikəl

mV#ŋ #kal ŋikVl

VM progressive eat fish

'Droteo is eating fish.'

(2) a Droteo a killiy a ŋikəl
k-il-al #iyV ŋikVl
eat (past) perfective fish
'Droteo ate the fish (completely).'

(3) a ŋikəl a milkaŋ
m-il-V #kal
VM (past) eat
'The fish was eaten.'

(4) a Toki a oməka er a Droteo
wV #mV#bVk #kal
progressive VM causative eat
'Toki is feeding Droteo.'

(5) a Droteo ma Toki a kəka a kəllir
kai #kal kal#Vl#irV
reciprocal eat food their
'Droteo and Toki are eating each other's food.'

(6) a ŋikəl a klaŋ
ŋikVl k-l-al
fish eat (resultative stative)
'The fish is eaten.'

The affixes in these sentences are among those which will be examined in the following chapters. Their semantic functions and their syntactic properties in fairly simple sentences will be discussed, along with the underlying forms and how they are altered by the phonological rules.

This work is aimed primarily at describing the

phonology and syntax of Palauan verbs and basically is not a theoretical discussion. Therefore it is necessary to make a great many assumptions about how a grammar works. In general I assume a syntactic analysis of the type commonly known as 'generative semantics', expounded in such works as Lakoff 1971 and McCawley 1970. In such an analysis the semantic representation is the underlying syntactic structure of a sentence to which syntactic rules (including lexical insertion) and phonological rules apply. I do not, however, aim to relate an underlying logical structure to a surface syntactic structure in the way that an analysis such as McCawley 1970 is presented. My major concern is to explain the functions of the surface elements, and not to relate them to a more abstract, language-independent underlying structure.

Fillmore 1968 presents a framework for analyzing sentences in terms of the case functions which noun phrases have. Although I do not espouse this analysis as the only possible basis for the present work, I find it illuminating to consider the case functions of the noun phrases in a great many of the sentences which will be cited.

Since the primary topic of this dissertation is a class of affixes (items which are phonologically bound to bases), some remarks on the analysis of affixes in a generative grammar are in order. There is no general

agreement in the literature on how affixes are to be analyzed. Assuming that they are not present in the underlying structure, linguists have proposed various types of rules for inserting them into a phrase marker. Lakoff (1970:28) uses the term 'spelling rule' for low-level syntactic rules which 'give phonological shape (suffixes, prefixes, and so on) to the syntactic features of lexical categories'. In other words, they add syntactically required affixes such as plural and agreement markers. Chomsky and Halle (1968:11) propose 'readjustment rules' which in effect have the same function as Lakoff's 'spelling rules'. Postal (1966:183) proposes a similar mechanism with his 'segmentalizations'.

Some Palauan affixes must be accounted for by means of a mechanism similar to Lakoff's 'spelling rules', Chomsky and Halle's 'readjustment rules', or Postal's 'segmentalizations'. Basically, this device will convert a feature on a verb into the phonological shape of an affix. For example, in Chapter VII I analyze the reciprocal affix /kai-/ as being a segmentalization of the feature [+Symmetric] on a verb. There are two other sources of affixes, however. Some affixes cannot be analyzed as the phonological shape of a particular syntactic feature; they must simply be added because of the syntactic environment. This is the type of affix traditionally known as 'inflectional'; examples are person and number agreement markers. A Palauan example is the

verb marker, which is obligatory for most verb stems in a great many sentences (see Chapter V). Finally, affixes can come from nodes in the deep structure. For example, I analyze the causative affixes (see Chapter VI) as being from a higher verb CAUSE, in the same way as McCawley 1968. I refer to this type and those which are segmentalized out of a verb as 'substantive' affixes since they have semantic content and must be present either as nodes or as features in the underlying structure. Those affixes such as the verb marker which are inserted because of the syntactic environment but have no semantic content I refer to as 'syntactic' affixes.

The chapters following the phonological analysis each discuss one or more affix. The affixes are listed here, together with some brief remarks on the nature of the discussion of them in later chapters.

The stative affixes discussed in Chapter IV are as follows:

/-l-/ resultative

/-Vl, -alVl/ anticipative

/bVkV-/ abilitative

/sVkV-/ habitual

These affix directly to a verb base in various types of stative sentences, which contrast with active sentences by virtue of the verb feature [+Stative]. The active, or [-Stative], affixes are given below:

/mV-/ verb marker

/-il-/ past

/l-, m-, ŋ-/ progressive

/-iyV, -rV/ perfective (third person singular)

/-ú/ predictive

/-á/ inchoative

These affixes are discussed in Chapter V. The verb marker has no semantic content, but is present in different phonological shapes on the majority of verbs in the language. The progressive and perfective markers alternate idiosyncratically on different stems; some historical explanations for the alternations are offered.

There are two causative affixes, /wV-/ and /bVk-/, which are discussed in Chapter VI. Most verb bases take one or the other, but some interesting cases of semantic contrast arise when a verb allows both. The reciprocal affix /kai-/ is the subject of Chapter VII; in this chapter I examine the functions of a reciprocal affix, and the various related uses which it has in Palauan.

Although other affixes besides those just mentioned will be referred to, the latter form the core of the subject matter of this dissertation. One class of items needs mention here since it is not discussed in this work. It is possible to regard the bound subject pronoun forms as affixes since they do not occur freely. Examples of them appear in the following sentences.

(7) {ak / ŋ} mo er a stoaŋ
mV#bo stoaŋ
VM go store
'{I am / He is} going to the store.'

I consider these to be phonological reductions of the free forms of the pronouns ŋak 'I' and ŋiy 'he', since both the free form and the reduced form cannot occur in one sentence:

(8) * a ŋak a ak mo er a stoaŋ

II. PHONOLOGY: UNDERLYING REPRESENTATIONS

2.0 Introduction

This chapter and the next are concerned with the sound system of Palauan. In this chapter I shall discuss the phonological nature of the items which are entered in the lexicon, and in the next chapter I shall discuss how the lexical entry of a form gets altered through the application of a set of phonological rules. This investigation is necessary since there are no adequate generative analyses of the phonology of the language. The verb morphology cannot be uncovered until we are able to identify the underlying forms of both the affixes and the verb bases. In order to do this, we must be able to determine what phonological rules have applied, and what the item was like before undergoing the rules. Most verbs surface in a variety of phonological shapes, so we must have criteria for deciding whether two surface forms of dissimilar shape are the same verb or not--that is, are derived from the same lexical entry. The subject of Palauan phonology is very complex, and I cannot attempt any kind of complete analysis here. My attention will be restricted to the major generalizations, and to those which are most crucial in analyzing the verb alternations.

In 2.1 I compare some Proto-Austronesian reconstructions with their Palauan reflexes. Dyen's proposal for reconstructing 'morphophonemic formulas' is discussed in

2.2. My proposed set of distinctive features for Palauan is presented in 2.3. In 2.4 I explain the necessity for including y and w in the underlying representations. Cases of indeterminacy of underlying representations are discussed in 2.5 and 2.6. In 2.7 I discuss the restructuring of a large part of the lexicon which has taken place through a rule of ŋ Epenthesis.

This analysis will generally follow the model of generative phonology as developed in Chomsky and Halle 1968. Since the publication of this work various modifications to the theory have been proposed (for example Kiparsky 1968b, Krohn 1969 and Kisseberth 1970) which make clear that the theory is as yet partially or totally undeveloped in many respects. Some theoretical difficulties will present themselves in the course of the present chapter which confirm this. In some problematical cases there is either no precedent for analysis or there are different precedents. In such cases I discuss the alternative solutions before adopting one.

2.1 Historical Considerations

We do not know which Austronesian languages are most closely related to Palauan. Dyen's 1965 lexicostatistical classification has Palauan as a separate branch of Malayo-Polynesian, thus claiming, in effect, that no single language or group of languages is closely related to it at all. This contradicts the general assumption,

held for example by Voegelin (1964), that Palauan is like Chamorro in being closely related to Philippine languages. I do not propose to make any claims about the genetic classification of Palauan. I do, however, want to make some comparisons between the phonology of Proto-Austronesian (PAN) and that of Palauan in order to demonstrate how Palauan has changed. As reconstructed by Dempwolff (1938), PAN has a phonology relatively similar to that of present-day languages spoken in the Philippines and Indonesia. I am referring, in particular, to the canonical forms of the morphemes, which are characteristically CVCVC (see Uhlenbeck 1950). There is no such typical shape to the underlying forms of Palauan, since the language has acquired some rules which are not shared by any related languages, as far as I know. These rules reduce and delete unstressed vowels and epenthesize schwas, thus obscuring the CVCVC historical shape of a great many lexical items.

The following are some PAN reconstructions with their Palauan reflexes. The underlying forms for Palauan will be motivated in the course of this chapter. All PAN forms cited are based on Dempwolff's reconstructions.

PAN	Palauan	
*mata	/mada/	'eye'
*niyuy	/lyus/	'coconut'
*batu	/badu/	'stone'

PAN	Palauan	
*bulan	/buyl/	'moon'
*peñu	/wel/	'turtle'
*tútu	/tutu/	'breast'

Some regular correspondences illustrated in this sample are:

PAN	Palauan
*t	d
*n, *ñ	l
*ɣ	s
*l	y
*p	w
*t'	t

In addition to the regular sound changes, some vowels do not occur in the underlying forms of Palauan, for example /buyl/ 'moon' and /wel/ 'turtle'. In some cases there is motivation for positing an underlying final or unstressed vowel in Palauan, but in others there is not. This must be determined independently for each morpheme by examining its alternant forms. Since the underlying vowels surface in their full, unreduced form whenever they are stressed, the problem of determining whether a form contains a vowel, or in some cases what quality the vowel has, reduces to finding alternants of each form with stress on a different syllable.

2.2 Dyen's 'Morphophonemic Formulas'

Dyen (1971:248) addresses himself to the problem

of relating different alternants of a form. He proposes a method for reconstructing 'morphophonemic formulas', from which all occurring alternants of a Palauan verb can be derived. Essentially this involves finding all the full vowels in the alternant forms; vowel reduction and deletion serve to obscure them in all but stressed syllables. Some of his examples of different alternants (with corrections which I have obtained in checking these forms), the 'morphophonemic formula' and the appropriate PAN reconstruction, if there is one, follow.

Alternants	Morphophonemic Formula	PAN
báil 'clothing' biúll 'to be clothed'	/báyúl/	*balun
ráel 'road' reáll 'to be travelled'	/ráyál/	*ḏalan, *dalan
məlámət 'straighten' təmátəl 'to be straightened'	/támát/	---
məlímət 'bail' ŋmátəl 'to be bailed'	/ŋímát/	*limaṯ

Dyen's insight here clearly points the way to a generative analysis of the data. I am not sure of the theoretical status of the 'morphophonemic formulas', but I adopt this method for discovering the underlying forms of the morphemes--that is, the items which are entered

in the lexicon and operated on by the phonological rules. Dyen's proposal is somewhat inexact; he does not explain why he assigns the 'morphophonemic formula' in each case, although it is evident that he is influenced by his knowledge of the reconstructions. He does not explain why he chooses /y/ to represent both i and e in /báyúl/ and /ráyál/[1] nor why he chooses /ŋ/ rather than /l/ for representation in the formula for /ŋímát/. These solutions can be motivated synchronically, as I hope to demonstrate in this chapter and the next.

Dyen enters stress in the formula, making an implicit claim that stress is unpredictable, which is not true. Stress is penultimate, and therefore whether or not a form contains a suffix affects the placement of stress. Dyen cites the necessity for 'rules of derivation' which relate the formula to the occurring forms. He briefly states what such rules should predict without discussing what form they take or how they operate in a grammar. A more specific treatment seems to be necessary.

2.3 Distinctive Features of Palauan

The set of distinctive features I employ are given in Figure 1, where parentheses are used for redundant specification. In general these features do not depart from those posited in Chomsky and Halle 1968. The authors (354-5) endorse the feature Syllabic to replace their feature Vocalic, although they do not use it themselves.

	b	t	k	ʔ	d	s	m	ŋ	l	r	w	y	i	e	a	o	u
Syllabic	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+
Consonantal	+	+	+	+	+	+	+	+	+	+	-	-	(-	-	-	-	-)
Sonorant	-	-	-	-	-	-	+	+	+	+	(+	+	+	+	+	+	+)
Grave	+	-	+	+	-	-	+	+	-	-	+	-	-	-	+	+	+
High	-	(-)	+	(-	-	-)	-	+	(-	-	-	+)	+	-	-	-	+
Voice	(+)	-	(-	-)	+	(-	+	+	+	+	+	+	+	+	+	+	+)
Continuant	(-)	-	(-	-	-)	+	(+	+	+	+	+	+	+	+	+	+	+)
Low	(-	-)	-	+	(-	-	-	-	-	-	-	-	-	-)	+	-	(-)
Lateral	(-	-	-	-	-	-	-	-)	+	-	(-	-	-	-	-	-	-)

1. Distinctive Features of Palauan

They abandon Jakobson, Fant and Halle's established feature Grave, and in doing so implicitly claim that [+Grave] consonants and back vowels do not constitute a natural class. Segments constitute a natural class if they operate together in rules in languages generally (Chomsky and Halle 1968:335). In place of Grave, Chomsky and Halle use Coronal for consonants and Back for vowels. It makes no difference to my analysis of Palauan whether [-Coronal] consonants and back vowels are a natural class, and this is an unsettled question in any case. I use the more conservative feature Grave since it allows me to use one feature rather than two.

Chomsky and Halle's position on High is somewhat unclear. They use Anterior for English palatals and velars (both are [-Anterior]) to distinguish them from apicals and labials. However, they also note that High, Low and Back, originally proposed for vowels, may also be used to distinguish and further specify the [-Anterior] consonants (1968:305). The [-Anterior] consonants are palatals, velars, uvulars, pharyngeals and laryngeals. The features High, Low and Back refer to the position of the body of the tongue. Palatals and velars are [+High]; glottal stop is [-High, +Low]. It seems to me that Anterior is redundant, unless it can be shown that consonants made either in the back or the front half of the mouth constitute a natural class. High can be used in

place of Anterior, again saving a feature. It specifies the velar consonants and the high vowels. Similarly, Low is used for the glottal stop and low vowels. Using features in this way assumes that, in each case, some vowels and some consonants constitute a natural class. This hypothesis cannot, however, be tested for Palauan.

The features Voice and Continuant do very little work in Palauan. The former distinguishes d from t, since this is the only position at which there is a voicing contrast. The d spirantizes to [ð] optionally initially and obligatorily elsewhere, and may devoice to [θ] finally. Examples are [ðiak] or [diak] 'negative verb', [kəðə] 'we (inclusive)' and [maθ] 'eye'. It would also be possible to mark d as [+Continuant]; a despirantizing rule would then be required for the initial occurrences as [d] rather than [ð].

There is phonetic [b], [p], [g] and [k], but only underlying /b/ and /k/. It is odd for a language to have /b/ but no /p/--that is, to have a voiced stop without its corresponding voiceless stop, at least from the point of view of markedness. The unmarked value of Voice for stops is [-Voice] (Chomsky and Halle 1968:404). According to Postal 1968:178, if a language has a segment which is the marked member of a contrasting set, this implies the presence of the unmarked member in the language. The historical facts make sense out of the oddness

here, however. PAN *p has become Palauan w, thus leaving the language with no p. If Postal's claim is correct we would expect some other segment to change to p, and the most likely candidate would of course be b. We find that /b/ is [p] before most consonants but not before l or vowels:

[prikəθ] /brikd/ 'hang'
[ptuʔ] /btuʔ/ 'star'
[blai] /blay/ 'house'
[boes] /boes/ 'gun'

The last example shows that we have an underlying voiced segment here since /k/ and /t/ are always voiceless initially before vowels. Possibly /b/ will in time change to /p/; this change may be in progress now although for the purposes of the synchronic grammar we need only note that /b/ is devoiced in most preconsonantal environments.

There is some variation in the way /k/ surfaces when intervocalic. Most often it becomes voiced, but it may remain as [k]. Some examples are [kau] 'you (singular)' and [səko:l] or [səgo:l] 'playful'.

Continuant distinguishes t from s, the only underlying fricative. Low works for both consonants and vowels, distinguishing ʔ from k and a from o.

Lateral distinguishes l from r. A peculiarity of Palauan is that the feature Nasal is redundant; the nasals m and ŋ are [+Consonantal, +Sonorant, +Grave]. This is a

very odd situation, caused by the historical sound change of PAN *n becoming Palauan l. This has divested the language of the most expected and universal nasal, n. This particular sound change is fairly unusual although also attested by Lyovin (personal communication) for many southern Chinese dialects. Previous to this change the feature Nasal would have distinguished n from r, but now Lateral distinguishes l from r, and the nasals can be specified otherwise. The only vestige of the sound change is in the alternations of the progressive affix, as we shall see in Chapter V; since this is an alternation of only one morpheme it cannot be considered to be a phonological rule. It must be considered as part of the lexical entry for this affix; in much the same way the alternants go and went cannot be predicted by any phonological rule of English. I shall treat several cases of such suppletion which reflects historical changes in the discussion of the affixes. The only phonetic n's which appear are due to the assimilation of /ŋ/ to following apicals, for example [iúns] 'island', underlying form /yuŋs/.

2.4 The Glides /w/ and /y/

It is necessary to include /w/ and /y/ in the underlying representations. This has been suggested before (Carlson 1968), but not worked out fully or accurately. Almost all surface forms of the glides are

syllabic high vowels; hence they are not always easy to recognize. They are historically from consonants, y from PAN *l and w from *p, as the following reflexes illustrate.

PAN	Palauan
*peñu	/wel/ 'turtle'
*pitu	/wid/ 'seven'
*apuy	/ŋawi/ 'fire'
*layaɣ	/yars/ 'sail'
*bulan	/buyl/ 'moon'

The surface forms of the glides will be discussed in the next chapter (see 3.7). The segments entered as glides in the above examples must be treated as consonants if the stress assignment and vowel reduction rules are to work properly, despite the fact that they are in most cases obligatorily syllabified. In addition, the interpretation of some occurrences of phonetic non-low vowels as glides is crucial to uncovering some of the morpheme structure constraints, the permitted sequences of segments which make up the underlying shape of morphemes in the language. This is a troublesome problem for Palauan since the interpretation of some surface segments and sequences of segments is not always clear.

For example, some surface vowel clusters must be interpreted as containing a glide; the examples /bayul/ and /rayal/ were given in the discussion of Dyen's proposal. I discuss the reasons for this interpretation in

in the context of the stress assignment rule. However, many cases of surface vowel sequences are indeterminate; the rules give no conclusive evidence for an interpretation of either glide plus vowel or vowel sequence. I discuss some examples of this later in the chapter; here I note only that there is evidence for a contrast between final (or medial) vowel plus glide (VG) and final (or medial) vowel sequence (VV), but no evidence for an initial contrast between GV and VV. The reasons for this will be discussed later; they have to do with which of the sequence is deleted when that syllable is unstressed. Glides do not delete; if a segment does delete in these circumstances it must be interpreted as a vowel. The following alternations are from the possessive paradigm, the simplest case of vowel alternation in the language. The first person possessive suffix surfaces as -ŋek in all these cases; other allomorphs will be discussed later.

Free Form	Possessed Form	Underlying Form
kléu	kleŋék	/kleu/ 'young coconut'
téu	teŋék	/teu/ 'width'
klóu	kluŋék	/klow/ 'size'

To my knowledge there are no forms which would give evidence for an initial contrast between glide plus vowel and vowel sequence. In cases of lack of evidence such as this I interpret the initial segment as a glide since there are clear cases of #GV, for example /wel/

'turtle', surface [uél]. The u would be stressed if the underlying form were /uel/. On the other hand, there are no clear cases of #VV. The interpretation involving glides preserves a simpler canonical form since it does not allow initial vowel sequences.

2.5 Indeterminate Vowels

In many cases I have evidence for positing an underlying vowel, but, since it is not stressed in any alternant, we have no way of knowing what vowel it is and therefore no way to represent it in the lexicon. For example, we know there is a vowel in the final syllable of [eáŋəθ] 'sky'; if there was not there would be no ə and the ŋ would assimilate to the following d, as in [sənsónd] 'twig', an obligatorily reduplicated form of underlying /soŋd/. Until I have discussed the possible alternatives for entering such forms in the lexicon I adopt the symbol V to represent the fact that there must be a vowel in the underlying form although I do not know what vowel it is. The form for 'sky' would therefore be entered /yaŋVd/. Another example of the same phenomenon is illustrated by the following contrast:

Free Form	Possessed Form	Underlying Form
ŋakl	ŋklék	/ŋakl/ 'name'
ŋígəl	ŋgəlék	/ŋikVl/ 'fish'

Rules discussed in Chapter III will make clear that the voicing of the /k/ and the presence of the following ə

necessitate an underlying form containing a vowel between the k and the l in the case of the word for 'fish' but not in the case of 'name'.

There are a number of ways that the indeterminacy of underlying vowels could be resolved:

(a) mark the segment as merely [+Syllabic], making it an unspecified vowel,

(b) posit underlying /ə/ for just these cases,

(c) assign the value of the least marked vowel already in the system.

I shall discuss these alternatives in turn. A set of marking conventions are proposed in Chomsky and Halle 1968 which will fill in the matrix of an underlying segment, making it phonetically fully specified. Only when a segment has a marked value of some feature does this information have to be entered in the underlying form. All unmarked values represent redundancies and do not have to be specified in the lexical entries. When the marking conventions have applied, however, a segment will be fully specified. Alternative (c) above is compatible with the Chomsky and Halle framework whereas the other two are not.

Alternative (c) was proposed by Schane (1968) in order to account for an indeterminacy in French. I interpret his analysis as providing the least marked vowel which is already in the system as the underlying

form. For the case of Palauan this would mean representing all indeterminate vowels as /a/. This seems to me a very unmotivated and arbitrary treatment, and one which makes undue assumptions concerning the psychological reality of the underlying forms. Schane addresses himself to those cases where two possibilities present themselves for the underlying form of a segment, rather than those cases where there are several, as with the unspecified Palauan vowels. He claims that when two such possibilities arise one is always more marked than the other--that is, more complex in specific ways. It is always the less marked alternative that should be chosen on the grounds that underlying representations should be as simple as possible, thereby making the whole analysis simpler. With regard to a specific feature, the unmarked member of a pair of segments 'generally has a higher frequency of occurrence ... is most likely to occur first in the acquisition of language ... (and) often appears in neutralized environments' (714-5). Markedness offers a means for computing the relative complexity of a segment in different environments, and, therefore, a way of establishing the simplicity of underlying representations. Unfortunately, however, the marking conventions for all segments are far from being established; it is only in an ideal sense that we can know the relative markedness of any pair of alternatives. Even assuming that we could do so, this solution

does not seem correct since it still requires that we fully specify segments (despite redundancies filled in by the marking conventions) when we have no evidence that a speaker's underlying representation must contain such full specification. For the case of the vowels whose value is unknown I see no reason for entering them as /a/. I would prefer an analysis that takes more account of the actually occurring forms. These vowels always surface as schwa. I posit no underlying /ə/ since the rules of Vowel Reduction and Schwa Epenthesis will be shown to produce all surface schwas except, of course, those whose underlying form is uncertain.

Krohn (1969:26-8) deals with a particular case of indeterminacy in English and discusses alternative solutions involving two opposite principles: Maximum Use of Available Phonological Rules and Minimum Use of Available Phonological Rules. By the principle of Maximum Use (practised but not explicitly formulated by Chomsky and Halle) the underlying representation which allows the form to undergo the maximum number of independently needed phonological rules will be adopted. For the Palauan case an underlying representation which enabled the form to undergo the vowel reduction rule would be chosen. The alternative principle would allow an underlying form close or equivalent to the surface form, since there would be no need to apply a phonological rule.

Krohn adopts the latter solution and posits underlying forms for some English vowels which are a great deal less abstract than those of Chomsky and Halle. Applying his solution here we would have to enter all indeterminate vowels as /ə/. The stress assignment rule could not apply to them, but the vowel reduction rule would vacuously apply. This is alternative (b).

Alternative (a) involves abandoning the notion that all segments must be fully specified in their lexical entries (after the marking conventions have filled in redundancies). Kisseberth (1972:5-6) proposes this principle in deciding how to enter a Klamath vowel that occurs in a particular class of morphemes and whose surface form is a copy of the vowel in the following syllable (of the following morpheme). He represents it as [+Syllabic] and no more, making it a pro-vowel or incompletely specified segment.

For the problem at hand alternatives (a) and (b) are much more theoretically satisfying than alternative (c) in my view. The choice between (a) and (b) might depend on one's assessment of their psychological reality, but I know of no way to test the psychological reality of underlying forms. Does it make more sense to claim that a speaker of Palauan has underlying forms with unspecified vowels which undergo an already very productive rule, or that he has underlying forms which are similar to the

surface forms in containing ə, a segment normally produced as output from some phonological rules? I adopt alternative (a), the pro-vowel analysis, here, since I am unconvinced that underlying forms must be fully specified, and the vowel reduction rule will apply in either case, converting all appropriate [+Syllabic] segments to [ə], or else vacuously, leaving the /ə/ unchanged. It is particularly unconvincing to posit /ə/ for those vowels which get deleted rather than reduced. In some cases, as we shall see, the stress rule requires an underlying final vowel which never surfaces. It is quite arbitrary to assign /ə/ rather than any other vowel in such cases. I suspect that the language is changing in the direction of acquiring underlying schwas, however, since some alternants which contain the necessary information for a speaker to assign an underlying full vowel are falling into disuse. As soon as a contrast between schwa and a full vowel arises such as cannot be predicted by the rules, the language must be said to contain underlying schwas. This point has not yet been reached, however.

2.6 Consonant Clusters

Another case of indeterminacy of underlying representations is presented by the surface consonant clusters. In some cases there is no way of telling whether there is an underlying vowel between the consonants since all alternants contain a cluster, for example [ksiθ] 'kind of

tree', [ptuʔ] 'star' and [dakt] 'fear'. The reconstructions for the latter two contain vowels: *bi[t]uhən 'star' and *takut 'fear'. There is no trace of the vowel in either case in the synchronic language although the historical process is clear: the unstressed vowels have reduced and deleted. There is now great freedom in what consonants can cluster (at least on the surface); very unusual (and highly marked) clusters are permitted initially, such as stop plus stop: [kboub] 'wall', and stop plus nasal: [tŋakl] 'peace offering'. The main restriction, which is most unexpected in view of the language's tolerance for highly marked clusters, is that homorganic clusters are not permitted. Very natural clusters like st- occur only in loan words: [stoaŋ] 'store' and [stob] 'stove'. On the surface, however, the very marked (Cairns 1969:873) initial clusters such as dŋ, db, and bŋ will become much less marked. One or both segments will be devoiced: [tŋoθ] 'tattoo needle', /dŋod/; [tpak] 'my poison', /duba#kV/; and [pŋak] 'my flower', /buŋa#kV/. The morphophonemics of the latter two forms will be explained in the following chapter. An alternative way of unmarking clusters is to insert a schwa: [dəŋoθ] is an alternative pronunciation for /dŋod/.

The problem remains, however, of whether to allow such marked clusters in the morpheme structure rules or whether to include an unspecified vowel between them on

the grounds that a vowel can be shown to exist for some forms. For example, the alternants [buŋ] 'flower' and [pŋak] 'my flower' justify an underlying form /buŋa/, as will be shown. We know that historically the clusters have come about through the deletion of vowels. Including unspecified vowels between the consonants in the underlying forms would allow very simple morpheme structure rules and very Indonesian-looking canonical forms (typically CVCVC). Also, of course, a sequence CVC is much less marked than a sequence CCV, although some consonant clusters are more highly marked than others, and Palauan seems to permit some of the more marked clusters in addition to the less marked ones (fricative plus stop: [spalo] 'basket' and [skoɾes] 'stick'; stop plus liquid or glide: [tyaŋ] 'this' and [blay] 'house'). However, a solution which posited underlying vowels between consonant clusters would be wrong since restructuring[2] of a large part of the lexicon has taken place.

The restructuring of the Palauan lexicon has involved changing many forms originally of the shape CVCVC to CVCC when no alternant with stress on the second vowel exists. For example, [dakt] 'fear' has no alternant with a vowel between the final consonants although historically there was one: *takut. The Palauan underlying form must then be /dakt/. Similarly, initial clusters can arise through vowel deletion (see 3.4); contrasts between #CC and #CVC

can come to exist through the relative deletability of u compared with other vowels. An example of such a contrast is [skorəs] 'stick', /skors/ versus [səko:l] 'playful', /sVkool/. The former was presumably /sukors/ at one time.

Since I am positing underlying clusters when surface clusters occur in forms that have no alternants containing a vowel between the consonants in the cluster, I must also account for the surface occurrences of CəC sequences, particularly word-finally, for example in [skorəs] 'stick'. Are they underlying CVC or underlying CC? Generally, consonant clusters containing at least one voiced member and any cluster containing ʔ will require an epenthetic ə. Surface sequences of CəC where one of the consonants is ʔ or one or both are voiced will be entered as /CC/ unless there is some alternant of the form which contains a vowel. For example, [kəruk] 'my medicine' has the free form [kar] 'medicine'; the underlying form must contain a vowel between the k and the r: /karu/. On the other hand, [kəri:k] 'rising tide' has no alternate form with such a vowel, so I enter it as /kriik/ since there is no phonetic [kr-] sequence, only [kər-]. By the same reasoning [skorəs] 'stick' would be entered /skors/ rather than /skorVs/.

2.7 ŋ Epenthesis

So far I have not discussed underlying forms with initial vowels, although we have established that initial

vowel clusters do not exist in the underlying representations. A particular epenthesis rule has restructured most of the vowel-initial bases in the language; it has added an initial ŋ. This is an odd rule since ŋ is the most highly marked nasal syllable-initially (see Bailey and Parker 1970:121). Forms whose reconstructions are vowel-initial appear in Palauan only with initial ŋ:

PAN	Palauan
*anak	/ŋalVk/ 'child'
*apuy	/ŋawi/ 'fire'
*ikan	/ŋikVl/ 'fish'

Forms which begin with vowels on the surface can be analyzed as having underlying initial glides (see 3.6). Examples are uŋil 'good', /wuŋil/ and ilkolək 'darkness', /yilkolVk/.

The epenthesis could possibly be motivated as a synchronic rule in order to account for certain alternations in the verbs (see 4.5.2, for example). Most verbs in most forms require the ŋ (for example ŋilmiy 'drink it') but a few odd forms do not (for example iluməl 'to be drunk'). I regard such forms as the latter as exceptional; in almost all cases restructuring is involved, and we have underlying initial /ŋ/ rather than initial vowels in those cases where the form always surfaces with initial ŋ. The ŋ epenthesis rule no longer operates initially, although a final ŋ is added before sentence boundaries following low

vowels.

2.8 Concluding Remarks

In the resolution of the indeterminacies of underlying representation I have tried not to adopt solutions which are unduly abstract and which could not be reasonably considered part of a native speaker's knowledge of his language. It is essential to realize how much of the lexicon has been restructured, although a number of phonological rules are definitely live rules in the language, causing many underlying forms to be quite different from their surface realizations. One is tempted to include such historical processes as one knows about in the synchronic grammar in the same way as in Chomsky and Halle 1968. However, such processes as the change from n to l no longer operate in Palauan since there is no longer any underlying /n/. To go to the opposite extreme of claiming that there is one and only one correct underlying form for every case of indeterminacy that I have discussed would be equally absurd, since that would mean ignoring the fact that the language is changing (for example in the direction of acquiring underlying schwas), and therefore some instability in the underlying forms is to be expected.[3] Stability is expected when the particular change comes to completion. At present, however, there is no preponderant pattern in the underlying forms of Palauan. Some are very Indonesian-like, whereas others have the

uniquely Palauan characteristics of containing very free consonant clusters and many vowels which cannot be fully specified. Some examples of underlying forms of different shapes are given in the appendix.

In discussing the morpheme structure constraints, which determine the underlying representations of the morphemes of the language, I have had to refer to many of the phonological rules. This was necessary, since, for a language with a complex phonology, the morpheme structure is far from transparent. Consideration of what interference the morpheme structure rules and the phonological rules might have with each other is essential in order to arrive at a consistent analysis of the phonology as a whole. The next chapter is concerned with the phonological rules.

FOOTNOTES TO CHAPTER II

[1]Dyen (personal communication) explains the _i_ and _e_ in a similar way to that presented in this work (see 3.6 and 3.7).

[2]Originally (for example Kiparsky 1968:175) the term 'restructuring' was used to refer to any discontinuous change in a grammar between generations. King (1969:39,81) proposes a narrower use of the term: a particular kind of grammar simplification resulting in a change in underlying representations. An example is the /hw/ in such English words as _which_ and _when_. For many speakers the underlying forms contain initial /w/, whereas for their parents the underlying forms contained initial /hw/ and the grammar contained a rule which changed this to _w_ under certain conditions. If there is no reason for the children of the next generation to learn the underlying form with /hw/ plus the rule changing it to _w_, they will construct a simpler grammar containing underlying /w/ and no rule. King's use of the term 'restructuring' is restricted to a discontinuous change in underlying representations between generations. I use the term in his sense in this dissertation.

[3]The way I have handled the indeterminacies in Palauan might suggest an _ad hoc_ approach to the analysis of phonological phenomena. For the purposes of a strictly synchronic analysis I believe this is to some extent

inevitable. Were I in a position to identify style/generation/social class variation in the manner of Labov 1966, I would know a great deal more about exactly how the language is changing and whose underlying representations have changed. Within the framework I am using and without the techniques of investigators like Labov, I must adopt a certain analysis of those areas which most defy synchronic analysis: variation and indeterminacy of underlying representation. I make no claims for the absolute correctness of my treatment of these areas; such a treatment is beyond my means at present. However, my discussion of the indeterminacies is consistent with that part of the analysis in which I feel on much firmer ground, and it fits as far as possible with known universals of phonological systems. Some information about the phonological system of a language is much more accessible to linguists working outside the speech community than that which deals with how the language is changing.

III. PHONOLOGICAL RULES[1]

3.0 Introduction

This chapter sketches a set of phonological rules for Palauan. In 3.2 I discuss the penultimate stress assignment. Sections 3.3-3.6 are concerned with the several related processes reducing and deleting unstressed vowels. The lower level rules of Sonorant Syllabification and Schwa Epenthesis are discussed in 3.7 and 3.8 respectively.

3.1 Background

The only phonological analyses of Palauan to date (Flora 1969, Carlson 1968) have been in the taxonomic phonemic framework of the American structuralists. They do not attempt to explain the complex morphophonemics of the language, which can be accounted for by the operation of a set of phonological rules on the underlying forms sketched in the previous chapter. The purpose of this chapter is to outline such a set of rules.

The processes to be discussed are those which are very productive throughout the language. I shall not discuss relatively unproductive or minor rules, although some are mentioned in the context of the major rules. Neither shall I address myself to the peculiar phonological traits of each affix; these reflect historical changes but not synchronic rules. Lakoff (1970) proposes a mechanism for recording the exceptional properties of

an item in its lexical entry, including the information that it undergoes or does not undergo certain rules. I adopt this mechanism here, and assume that when a lexical item alternates in an idiosyncratic way this must be recorded in its lexical entry, not in the phonological rules of the language. Such irregularities pertaining to verb affixes will be discussed in the chapter on the appropriate affix.

The rules are ordered in the sequence in which they are discussed except in those cases where more than one formal rule is discussed under one heading. They are strictly formalized only when I judge that doing so sheds light on the nature of the rule.

3.2 Stress Assignment

Primary stress is assigned to the penultimate vowel in a word of two or more syllables or to the only vowel in monosyllables, as is characteristic of Indonesian languages. Stress is assigned once all the syntactic rules have combined the morphemes in their surface order, so that suffixes of more than one syllable may be stressed although prefixes are never stressed. There is an irregular phenomenon of secondary stress which generally occurs two or three syllables before the penult, but I do not propose to deal with that. Surface stress is normally on the final syllable because of the later rules which reduce and/or delete the unstressed ultimate vowel. The reality

of this rule may be demonstrated by examining different alternants of a form with stress on different vowels. A common alternation of this kind involves the free form of a noun and its first person possessed form, for example [buŋ] 'flower', [pŋak] 'my flower', where /b/ becomes [p] before another consonant, and [tub] 'spit', [tpak] 'my spit'. Suppletion is evidenced in the behaviour of this affix: it surfaces as -ék or -ŋék when the underlying form of the noun has a final consonant, but as -ák, -ík or -úk when the underlying form contains a final vowel (which must be a, i or u respectively, there being no final e or o in the underlying forms). As we saw in Chapter II, some nouns have possessed forms with -ŋék; this is not a predictable property even though it applies to a sizeable class of items. The -ék and -ŋék 'allomorphs' of the first person singular possessive suffix must be disyllabic since the penultimate vowel is always stressed. For the same reason, the other 'allomorphs' must consist of only one syllable: /-kV/ versus /-ekV/ or /-ŋekV/. Since changes in stress provide evidence for almost all the rules which follow, I shall be citing many possessive forms as it is the simplest example of stress alternation. Positing an underlying form for each of the preceding examples, we are able to derive both alternants from a form of CVCV shape with one stress rule.

Free Form	Possessed Form	Rules Applying
buŋa	buŋa#kV	
búŋa	buŋákV	Stress Assignment
búŋ	bŋák	Vowel Deletion
tuba	tuba#kV	
túba	tubákV	Stress Assignment
túb	tbák	Vowel Deletion

Vowel Deletion will be discussed later in the chapter. A later rule will also devoice the b in each of the suffixed forms. Underlying vowels which are word-final can thus be recovered by suffixing another morpheme to the base in question. The stress assignment rule will stress the penultimate vowel, preserving it from later reduction or deletion.

The stress assignment rule is crucial evidence in the interpretation of some vowels as glides, for glides do not take stress. A surface vowel which is penultimate in the underlying form will be an underlying vowel if it takes stress and an underlying glide if it does not. Where we have such alternants as [ŋáu] 'fire', [ŋuík] 'my fire', the underlying form could be only /ŋawi/, not /ŋaui/. If it was the latter the u would be stressed in the free form: ŋaú, and this is incorrect. The u does not attract stress, therefore it must be interpreted as an underlying glide: /ŋawi/. The correct derivations are as follows:

Free Form	Possessed Form	Rules Applying
ŋawi	ŋawi#kV	
ŋáwi	ŋawíkV	Stress Assignment
ŋáw	ŋwík	Vowel Deletion

A subsequent rule will syllabify the w; this will be explained in 3.7.

Without the evidence of stress, the alternants [báil] 'clothing' and [biúll] 'to be clothed' could be derived from an underlying form /baiul/ or /bayul/. This is a verb alternation; the morphophonemics of the latter form will be explained in 4.5.2. If /baiul/ were correct the i, being the penultimate vowel in the free form, would be stressed, giving baíl, which is wrong. The i is not stressed in any alternant; therefore it must be an underlying /y/.

The stress assignment rule cannot resolve other indeterminacies which were discussed in Chapter II. In the case of a surface form of the shape CVCC (for example [dakt] 'fear') or CVCəC (for example [ŋikəl] 'fish') it would make no difference to the stress placement whether the underlying forms are monosyllabic (CVCC) or disyllabic (CVCVC). In either case stress would be assigned to the first (or only) vowel.

The next several rules cover the processes of vowel reduction and deletion. There are several such processes, which are interrelated in quite complex ways, dealing with

the reduction of vowel clusters, vowel plus glide sequences, single vowels and glide plus vowel sequences, and the deletion of vowels. When they are unstressed, vowels are deleted following other vowels or before glides, single vowels are reduced to schwa, and glide plus vowel sequences are reduced to one vowel combining some features of the glide and of the following vowel. They must be ordered in the sequence given for reasons which will be discussed.

3.3 Reduction of Vowel Clusters and Vowel plus Glide

Vowel clusters and geminate vowels are quite common in Palauan, and I have no evidence as to their historical source. As a general rule, when neither vowel in the sequence is stressed the sequence reduces to one vowel, generally the first. Whenever stress is assigned to one member of the cluster, however, the other does not reduce or delete.

Not every unstressed vowel sequence follows this rule. A few cases do not reduce at all, for example [ʔeúʔəl] 'space between islands', third person possessed form: [ʔeuʔəlél]. There is at least one case where the reduced form is not predictable: [ráel] 'road', [rolék] 'my road'. There are many examples where the cluster reduces to one vowel, as expected, and this output then undergoes the further rule (to be discussed) which reduces it to schwa. All these cases are in some way exceptional

with respect to the rule for reducing vowel clusters. Regular instances of such reduction is illustrated in the following examples. Again we use possessive alternants of nouns; here the underlying forms contain a geminate vowel or vowel sequence. In the free form stress is assigned to one or other member of the vowel sequence, so the sequence remains. In the possessed form stress is assigned to the suffix, so the vowel cluster or geminate vowel must reduce.

Free Form	Possessed Form	Underlying Form
bóes	bosék	/boes/ 'gun'
uréor	urerék	/wureor/ 'work'
ʔomoáʔəl	ʔomoʔəlék	/ʔomoaʔVl/ 'river'
téu	teŋék	/teu/ 'width'
lu:k	lukék	/luuk/ 'nest'
de:l	delék	/deel/ 'nail'

A sample derivation of a free form and its possessed form is as follows:

Free Form	Possessed Form	Rules Applying
boes	boes#ekV	
bóes	boesékV	Stress Assignment
	bosékV	Cluster Reduction
	bosék	Vowel Deletion

Besides the reduction of vowel clusters to one vowel, I also want to account for the cases where a vowel deletes when followed by a glide. Combining the two

would produce the following rule (informally stated):

$$\begin{bmatrix} V \\ -\text{Stress} \end{bmatrix} \rightarrow \emptyset / \left\{ \begin{matrix} V___ \\ ___ \begin{Bmatrix} y \\ w \end{Bmatrix} \end{matrix} \right\}$$

I do not want to argue that this would be an acceptable rule. Much doubt has recently been cast on the validity of braces as a notational convention in both phonology and syntax (for example, McCawley 1970:296). The claim is that they do not capture generalizations, and whenever braces are now used the 'rule' should be rewritten as two. It would make sense to have two separate rules for the case under discussion, one for the reduction of unstressed vowel sequences and the other for the deletion of unstressed vowels when preceding a glide. The only reason why I include them together is that I can find no evidence for ordering one before the other.

When a surface vowel cluster containing a high vowel alternates with the high vowel (especially when it was the second member of the cluster), there is a good chance that it is an underlying glide since glides never delete and never reduce to schwa. Confirming evidence can often be found from the stress assignment. For example, [búil] 'moon' would be bulêk in the possessed form if the underlying form were /buil/, in the same way as /boes/ 'gun' produces the possessed form bosêk. The actual possessed

form of [búil] is [bilék]; to account for this the underlying form must be /buyl/, with the vowel preceding the glide obligatorily deleting when unstressed. This form regularly reflects PAN *bulan 'moon', showing the l to y historical change. Another example is [ʔáis] 'news', [ʔisék] 'my news', where the underlying form must be taken as /ʔays/, or otherwise the possessed form would be ʔasék.

Some indeterminacies can remain, however. For example, [dióseʔ] 'place to bathe', possessed form [diseʔék], could be either /diosVʔ/ or /dyosVʔ/ or /dyosʔ/; the o would always be stressed in the free form whereas the i would remain, being the first vowel in an unstressed sequence (in the possessed form) or if it is underlying /y/ it would not delete by virtue of being a glide. However, I have no cases of prevocalic high vowels that must be interpreted as underlying vowels, so I am assuming that all dubious cases can also be interpreted as underlying glides. The indeterminacy between including and not including a vowel in the last syllable remains, however; this is an example of an indeterminacy that is inherent in the language. There would always be a surface e in this position because of the ʔ, which requires an epenthetic schwa. My policy is not to posit underlying segments without motivation, so that such cases as this will always be interpreted as containing an underlying

final cluster: /dyosʔ/.

3.4 Vowel Deletion

Vowel Deletion applies only to /u/ and to other unstressed vowels in several specific environments. Final vowels must delete, as we have already seen. Vowels which follow an initial consonantal sonorant must delete when they are unstressed. If Vowel Deletion were ordered after the rule which reduces single vowels to ə, the information on the quality of the underlying vowel would be lost, so there would be no way to make the deletion rule apply only to /u/. Final vowels could undergo the reduction rule and then be deleted, but only one rule needs to apply to them in the ordering which I propose. This rule may be beginning to generalize to other vowels, and there is some variability in its application, but it applies most productively in the three environments cited.

Final vowels are always deleted; they can be recognized only by inspecting the suffixed alternants of a form. Such alternants will be discussed in the context of the next rule; here I cite some examples of free forms whose final vowels have been deleted.

karu 'medicine'	keri 'question'	
káru	ké́ri	Stress Assignment
kár	ké́r	Vowel Deletion

Underlying /u/ is generally deleted when unstressed,[2] except when adjacent to a glide or another vowel (as we

shall see in connection with other rules). The other vowels, in contrast, normally reduce to schwa when unstressed. The alternations [buŋ] 'flower', [pŋak] 'my flower' and [tub] 'spit', [tpak] 'my spit' were discussed in 3.2. The possessive forms show deletion of an underlying /u/ in each case. The unreleased initial consonant in the resulting cluster is then devoiced and a voicing assimilation rule devoices the second if it is an obstruent; the surface clusters [pŋ] and [tp] are produced. That the vowel deletion rule does not apply to the other vowels can be shown by considering contrasts such as the following:

Free Form	Possessed Form	Underlying Form
kuθ	ktuk	/kudu/ 'louse'
baθ	bəðu̯k	/badu/ 'stone'

When the underlying form contains a CuC sequence the possessed form will contain a CC, whereas if the underlying vowel is not /u/ the surface possessed form will contain a CəC sequence. In the case of [ktuk] 'my louse' the voicing assimilation rule has produced a surface cluster that agrees in voicing, whereas in [bəðu̯k] 'my stone' the /d/ remains voiced and becomes a fricative since it is intervocalic. In both of the free forms the final /d/ has both spirantized and devoiced, producing surface [θ].

A few instances of unstressed /u/ do not delete, however. The rule under discussion cannot predict the following alternations:

Free Form	Possessed Form	Underlying Form
ʔur	ʔuraˆk	/ʔura/ 'tongue'
klukl	kləkleˆk	/klukl/ 'cough'

These items will be marked as exceptions in their lexical entries.

When a form begins in a consonantal sonorant (the glides behave differently, as we shall see) the most common surface form of the sonorant is syllabic, with the following vowel having deleted. Hence the vowel deletion rule must operate in this environment, although it cannot operate when there is a morpheme boundary between the vowel and the following consonant. This is to prevent forms containing the verb marker (see Chapter V), whose underlying form is /mV-/, from surfacing with initial syllabic m̩, for they do not. To account for such alternations as [ŋakl] 'name', [ŋ̩klek] 'my name', the derivation must be as follows:

ŋakl#ekV	
ŋakleˆkV	Stress Assignment
ŋ̩kleˆk	Vowel Deletion

Vowel Deletion applies to two vowels simultaneously in this case. The sonorant syllabification rule (see 3.7) will syllabify the ŋ.

The vowel deletion rule can even apply in a few cases where the underlying vowel following the initial sonorant is geminate. The only example I have of this involves a

geminate u: [lu:t] 'return', [l̥tek] 'my return', underlying /luut/. The derivation for the possessed form is as follows:

luut#ekV
luutékV Stress Assignment
lték Vowel Deletion

This example contrasts with the more normal pattern, where /uu/ reduces to a single vowel, as in [lu:k] 'nest', [lukék] 'my nest' (see 3.3). Underlying /uu/ may also reduce to single u and then reduce to schwa; we shall see further examples of this phenomenon in 3.5. An example alternation is [ʔoməruʹ:l] 'making', [ʔoməəllék] 'my making'.

The possessed alternants of bases beginning in /r/ have surface forms with either [rə-] or a syllabic retroflexed voiced fricative. Vowel Deletion may apply here; if it does the syllabic r is produced, whereas if it does not the vowel will have to undergo the next rule, reducing to schwa. This is a case of optional rule application. Some examples where Vowel Deletion does apply are:

Free Form	Possessed Form	Underlying Form
rásəʔ	r̥səʔék	/rasʔ/ 'blood'
reŋ	r̥ŋuk	/reŋu/ 'heart, spirit'

The derivation for the possessed forms is as follows:

ras?#ekV reŋu#kV
ras?ékV reŋúkV Stress Assignment

rsʔe̊k rŋůk Vowel Deletion

Further rules will syllabify the r and insert a ə between s and ʔ in rsʔe̊k. The surface forms which have not undergone Vowel Deletion would be [rəsəʔe̊k] and [rəŋůk].

My evidence for claiming that the vowel deletion rule may be beginning to generalize rests on such alternations as the following:

Free Form	Possessed Form	Underlying Form
dik	tkek	/dik/ 'wedge'
ʔəbíŋəl	ʔəpŋəle̊k	/ʔVbiŋVl/ 'fish trap'
ʔoðíŋəl	ʔotŋəle̊k	/ʔo#diŋVl/ 'visit'

In these examples /i/ is deleted in the possessed forms, and the contiguous voiced obstruent becomes voiceless. That Vowel Deletion applies to these forms will have to be marked in their lexical entries. However, there are not many lexical items in which Vowel Deletion applies to /i/; in the great majority of cases it applies only in the environments already cited. Another, even more exceptional case is [kləŋít] 'sin', [kŋtí̊k] 'my sin', underlying /klVŋiti/. Here the sequence /lV/ has deleted along with the /i/, leaving syllabic ŋ as the nucleus of the first syllable of the possessed form.

To summarize, the three environments for the operation of the vowel deletion rule are: final vowels, vowels following initial consonantal sonorants, and u, all when unstressed. These are quite different environments, and

probably should not be collapsed into one formal rule.

3.5 Reduction of Single Vowels

Unstressed single vowels reduce to schwa when between consonants, excluding glides:

$$\begin{bmatrix} V \\ -Stress \end{bmatrix} \rightarrow \text{ə} / [+Consonantal] ____ [+Consonantal]$$

All the vowels except u, which has already been taken care of by the vowel deletion rule, can undergo this reduction process, as the following possessive forms illustrate:

Free Form	Possessed Form	Underlying Form
psips	psəpsêk	/bsibs/ 'hole'
ker	kərîk	/keri/ 'question'
kar	kərûk	/karu/ 'medicine'
ŋor	ŋərêk	/ŋor/ 'mouth'

Some sample derivations follow; the possessive suffix is /-ekV/ when the base ends in a consonant and /-kV/ when the base ends in a vowel.

ŋor#ekV	karu#kV	
ŋorêkV	karûkV	Stress Assignment
ŋorêk	karúk	Vowel Deletion
ŋərêk	kərûk	Reduction of Single Vowels

We have seen that /i/ undergoes the vowel deletion rule in some cases. This vowel seems to have a resistance to being reduced to schwa, since in many forms it remains as [i]:

Free Form	Possessed Form	Underlying Form
ʔim	ʔimaˆk	/ʔima/ 'arm'
titái	titiuˆk	/titayu/ 'object that rolls'
ilúməl	iməleˆk	/ilum#Vl/ 'drink'
bíllum	billəməŋeˆk	/billum/ 'wrapped tapioca'
bílas	bilsəŋeˆk	/bilas/ 'boat'

These forms are all somewhat odd since they contain more full vowels on the surface than the rules would predict. The form [iməleˆk] 'my drink' has lost a whole syllable in the possessive form; this word is odd in a number of respects (see 4.5.2). The forms /bilas/ and /billum/ are members of the sizeable class of nouns that require the [-ŋek] 'allomorph' of the possessive suffix. Some further examples are:

Free Form	Possessed Form	Underlying Form
i:	iyəŋeˆk	/yiy/ 'cave'
i:s	isŋeˆk	/yis/ 'nose'
téu	teŋeˆk	/teu/ 'width'
u:m	uməŋeˆk	/wum/ 'kitchen'

It is clear that the previously cited examples with /i/ illustrate that the rule for reducing single vowels does not apply to all lexical items. It cannot be an accident that they all contain the vowel i; when discussing the previous rule I also gave some examples of u that neither deletes or reduces. I would treat this by marking in the lexical entries of the appropriate forms that they

do not undergo the reduction rule (or deletion, in the case of u), but it could be argued that this is losing a generalization. Restricting our attention to the case of i, since u is not normally subject to the vowel reduction rule anyway, a speaker could be said to know that i is less likely to reduce than the other vowels, although it does so sometimes. If it were a stylistic rather than purely lexical matter the information would have to be included in the statement of the rule since it is part of a speaker's knowledge of how the rule operates. The rule would then have to be stated as a variable rule of the type demonstrated in Labov 1970. In such a rule, features (linguistic and extra-linguistic) in the environment are weighted so that their presence favors the application of the rule but does not make it inevitable. In this case [-High] seems to favor application of the rule since high vowels are less likely to reduce than the other vowels. It is clear that there is some sort of hierarchy of reducibility among the vowels and that this corresponds roughly to vowel height; a is the most predictable vowel in this respect, always reducing to schwa. I suspect that this rule is influenced by stylistic factors, that the same word is pronounced differently be different speakers and in different styles. I cannot, however, make any claims about an on-going change, which is what the variable rule was designed to incorporate into a synchronic grammar.

Therefore I adopt the orthodox (Lakoff 1970, Chomsky and Halle 1968) but strictly synchronic solution of marking exceptions in the lexicon.

Several nouns whose free forms contain geminate vowels or vowel clusters will reduce the whole sequence to schwa in the possessed forms; we have already encountered the example of [ʔoməruˊ:l].

Free Form	Possessed Form	Underlying Form
ʔoməruˊ:l	ʔomərelleˆk	/ʔo#mV#ruwol/ 'making'
di:l	dəleˆk	/diil/ 'stomach'
daˊob	dəbeˆk	/daob/ 'ocean'
ʔokdəmaˊol	ʔokdəməleˆk	/ʔokdVmaol/ 'maternal uncle'

These have the exceptional property of undergoing both the cluster reduction rule and then the rule for reduction of single vowels. The cluster reduction rule must be ordered first in order that forms such as these can undergo both rules. The fact that they undergo the rule for reducing single vowels is an odd property which must be recorded in the lexical entry of such forms. Some sample derivations of possessed forms are:

diil#ekV	daob#ekV	
diileˆkV	daobeˆkV	Stress Assignment
dileˆkV	dabeˆkV	Cluster Reduction
dileˆk	dabeˆk	Vowel Deletion
dəleˆk	dəbeˆk	Reduction of Single Vowels

3.6 Reduction of Glide plus Vowel

A sequence of a glide followed by an unstressed vowel will reduce to a vowel which has some features of the glide and some of the vowel. Some examples from the possessives with underlying /w/ plus non-high vowel sequences reducing to [o] follow.

Free Form	Possessed Form	Underlying Form
waʔ	oʔíḵ	/waʔi/ 'leg'
wak	okúḵ	/waku/ 'anchor'
wes	osŋéḵ	/wes/ 'look, sight'

These alternations were brought to my attention by Carlson MS a. The noun /wes/ 'look, sight' requires the -ŋek allomorph of the possessive suffix whereas the others take /-kV/. A sample derivation follows.

waku#kV	
wakúḵV	Stress Assignment
wakúḵ	Vowel Deletion
okúḵ	Reduction of Glide plus Vowel

When /w/ is followed by a high vowel the sequence reduces to [u] rather than [o], for example:

Free Form	Possessed Form	Underlying Form
wíŋəl	uŋəléḵ	/wiŋl/ 'tooth'
wum	uməŋéḵ	/wum/ 'kitchen'
wúləʔ	uləʔéḵ	/wulʔ/ 'doormat'

In citing the independent forms I am ignoring for the moment the fact that the initial glides will later syl-

labify. Some examples of /y/ followed by an unstressed vowel are the possessive forms of the following nouns:

Free Form	Possessed Form	Underlying Form
yuns	insék	/yuns/ 'island'
yolt	elték	/yolt/ 'wind'

Here /y/ plus the high vowel reduces to [i] whereas /y/ plus the non-high vowel o reduces to [e], in parallel fashion to the reduction of /w/ plus a following unstressed vowel. Further data can be given from some verb forms which cause an underlying vowel in the second syllable of a disyllabic base to come to the surface (see 4.5.2). The verb base occurs independently as a noun in each case.

Noun	Anticipative Stative	Underlying Form
bá́il	biúll	/bayul/ 'clothe'
rá́el	reá́ll	/rayal/ 'walk, road'

The noun forms are derived as follows:

bayul	rayal	
báyul	ráyal	Stress Assignment
bá́il	rá́el	Reduction of Glide plus Vowel

The underlying sequence /yu/ reduces to [i] whereas the underlying sequence /ya/ reduces to [e]. The syllabified forms of the glides in the anticipative stative forms will be discussed in 3.7.

The general form of this rule is that glide plus high vowel sequences reduce to the high vowel with the same value of Grave as the glide, whereas glide plus

non-high vowel sequences reduce to the mid vowel with the same value of Grave as the glide. This can be stated neatly by the following rule, which is transformational in shape:

$$\begin{bmatrix}-\text{Syllabic}\\-\text{Consonantal}\\ \alpha\text{Grave}\end{bmatrix}\begin{bmatrix}+\text{Syllabic}\\ \beta\text{High}\\-\text{Stress}\end{bmatrix} \rightarrow \begin{bmatrix}+\text{Syllabic}\\ \alpha\text{Grave}\\ \beta\text{High}\end{bmatrix}$$

This rule must be ordered after the two reduction rules that I have already discussed or the wrong output will result. A vowel is the output of this rule and it could get deleted by the cluster reduction rule, as the following erroneous derivation illustrates.

bayul#ekV 'my clothing'	
bayulé̂kV	Stress Assignment
bailé̂kV	Reduction of Glide plus Vowel
balé̂kV	Cluster Reduction
*balé̂k	Vowel Deletion

Similarly, the output of the rule under discussion could undergo Reduction of Single Vowels and be converted to [ə], again giving the wrong output:

waku#kV 'my anchor'	
wakû̂kV	Stress Assignment
wakû̂k	Vowel Deletion
okû̂k	Reduction of Glide plus Vowel
*əkû̂k	Reduction of Single Vowels

It will be recalled that the rule reducing single vowels

specifies [+Consonantal] in the environment, thus preventing unstressed vowels adjacent to glides from reducing to [ə], so there is no ordering difficulty with respect to this rule.

Reduction of Glide plus Vowel is an important rule for analyzing much of the verb morphophonemics, especially that part of the rule that deals with the reduction of wV sequences. There is an alternant of the verb marker /mV-/ which is -w- (see 5.3). This plus a following vowel will reduce to a single vowel (o or u) when that syllable is unstressed, for example when the form contains a suffix. An illustration of such an alternation is two forms from the verb base /sesob/ 'burn': [swésəb], perfective non-human plural with infixed verb marker, and [sosəbíy], perfective singular with infixed verb marker and suffix /-iyV/. In addition, one of the causative affixes has the underlying shape /wV-/ but normally surfaces as [o-] since it is never stressed.

3.7 Sonorant Syllabification

As we saw in the discussion of Vowel Deletion, the consonantal sonorants syllabify when they are initial and are followed by a consonant: [n̩klék] 'my name'. Some examples where the underlying form contains an initial cluster, the first member of which is a sonorant, are [l̩kes] 'sandbar', /lkes/ and [n̩du:l] 'clam', /nduul/. In the latter example /n/ assimilates to the following

d, becoming [n]. In the case of [ɬóməs] 'light', the initial syllabic sonorant demonstrates that there is an underlying consonant cluster since this is the only environment in which sonorants syllabify. The form must then be interpreted as /llomVs/.

The most common form of the imperative affix is [m-], a phonological reduction of /ʔomo-/. The m is generally syllabified since there is always a consonant at this boundary:

Imperative	Verb Base
m̩kái̯s	/kays/ 'open'
m̩séséb	/sesob/ 'burn'
m̩aθ	/mad/ 'die'

There is a parallel pattern for the glides; they syllabify when preceding a vowel, which must of course be stressed since otherwise the sequence would be taken care of by Reduction of Glide plus Vowel. Examples are: [uél] 'turtle', /wel/; [eáŋəθ] 'sky', /yaŋVd/; [koáθ] 'fight', /kwadi/; and [eólt] 'wind', /yolt/. The glides syllabify as high vowels and then assimilate to following non-high vowels by becoming mid. Hence we have [eólt] 'wind' but [iúns] 'island'; the underlying forms are /yolt/ and /yuns/ respectively.

The rule can be stated as follows:

$$\begin{bmatrix} +\text{Sonorant} \\ \alpha\text{Consonantal} \end{bmatrix} \rightarrow [+\text{Syllabic}]/[-\text{Syllabic}]__[-\alpha\text{Syllabic}]$$

Sonorants syllabify when their value of Consonantal is opposite to the value of Syllabic of the following segment. That is, glides syllabify before vowels and the other sonorants syllabify before consonants. Including [-Syllabic] in the environment allows both to be specified with one feature. Consonants and boundaries are both [-Syllabic]; initial boundaries are the environment for the syllabification of the consonantal sonorants, and consonants or boundaries for the glides.

The glides also syllabify when between consonants, for example, after an adjacent vowel has been deleted. Some examples follow:

Free Form	Possessed Form	Underlying Form
búil	bilék	/buyl/ 'moon'
ʔáis	ʔisék	/ʔays/ 'news'
klóu	kluŋék	/klow/ 'size'

This rule may also apply to /l/ and /r/; they may syllabify interconsonantally and finally after another consonant: [iédl̩] 'mango', /yedl/ and [tretr̩] 'cold', /tretr/. However, they are just as likely to undergo the next rule, along with the other sonorants. This syllabification rule will have to be different from the one already formalized since its environment is quite different.

Syllabification functions to make almost all underlying glides surface as vowels; they are identifiable as non-syllabic segments only intervocalically when the

following vowel is stressed, and finally in clusters. The underlying form of the base of the verb 'sleep', for example, is /ʔiwayw/; the surface form with the obligatory verb marker /mV-/ is [məʔiwáyəwə]. The first /w/ is phonetically [w] since it is intervocalic and the following vowel is stressed. Both consonants in the final cluster are phonetically glides; the schwas following each are discussed with the next rule.

3.8 Schwa Epenthesis

This rule functions to interrupt and unmark some of the tautosyllabic consonant clusters in the base forms or consonant clusters produced by any of the preceding rules. There are certain phonetic clusters which Palauan will not permit, including almost all final consonant clusters. Schwas must be epenthesized around voiced segments, around ʔ and finally after a cluster. An initial consonant cluster may on the surface have a voiceless first member and a voiced or voiceless second member, but it may not have a voiced first member. In the cases of [pŋak] 'my flower', /buŋa#kV/ and [tpak] 'my poison', /duba#kV/ this is taken care of by devoicing the first consonant. An alternative is to epenthesize a schwa. For many forms both are possible, for example /dŋod/ 'tattoo needle' may surface as [tŋoθ], where the initial d is unreleased and therefore voiceless, or as [θŋoθ], where the spirantization has already taken place and the segment has devoiced, or as

[dəŋǒθ], with the d remaining voiced but the epenthetic schwa present. However, [dŋoθ] or [ðŋoθ] are impossible. This is an odd kind of constraint on clusters; one would expect the rules to make consonant clusters agree in voicing. Voiceless clusters are produced by rules, for example [tpak] 'my poison', /duba#kV/, but no such rule produces clusters where both members are voiced.

When a form ends in a cluster it will acquire a schwa release by this rule, unless the final member of the cluster is a voiceless fricative, for example [sils] 'sun', /sils/. A final d may surface as [θ] or as [ðə], the former being a voiceless fricative which therefore requires no schwa. The form /ŋVrard/, a village name, can either surface as [ŋəráɾəðə] or as [ŋəráɾəθ], with the epenthesis rule applying in the latter case only between the r and the d. Straightforward examples of a final epenthesized schwa are: [dâktə] 'fear', /dakt/; [kpǒkpə] 'wall', /kbokb/. The release in [diâl:ə] 'ship' allows us to interpret the form as /dyall/; if it were /dyal/ it would surface without the final schwa.

Schwas are epenthesized finally not only in those cases where the underlying form has a final consonant cluster, but also when the rule reducing single vowels to schwa has applied, producing a CəC# sequence, where the second consonant is voiced. For example /mV#sesob/ 'burn' can surface as either [məsésəp], with the very natural rule

of final devoicing having applied, or as [məsésəbə], with the b remaining voiced and a final schwa added. Clusters whose final member is l may either syllabify the l, as discussed in 3.7, or a schwa may be epenthesized on either side; /wiŋl/ 'tooth' surfaces as either [uíŋl̩] or [uíŋələ]. The schwas in [məʔiwáyəwə] 'sleep' are epenthesized because the glides do function as consonants with regard to this rule when they are in final clusters. They are released in forms such as [swóswə] 'milt', /swosw/.

The ʔ requires an epenthetic schwa between it and any other consonant: /lalʔ/ 'pus' becomes [láləʔə] and /ʔdib/ 'ant' becomes [ʔədíp]. This is not a particularly expected constraint; since the language permits so many marked clusters to occur in the underlying forms and (to a lesser extent) on the surface, there is no apparent reason why clusters involving ʔ should be avoided on the surface.

We saw in 2.6 that the morpheme structure rules permit no homorganic consonant clusters. However, if any such cluster should arise through morpheme combination the epenthesis rule will add an intervening schwa. For example, compare [blóes] 'shot', /boes/ with infixed stative affix /-l-/ (see 4.5.1), with the same form for /sesob/ 'burn': [səlésəbə]. In the latter case an extra schwa is necessary to prevent the homorganic cluster [sl].

Two of the examples cited are derived as follows:

wiŋl	mV#sesob	
wíŋl	mVsésob	Stress Assignment
	məsésəb	Reduction of Single Vowels
uíŋl		Sonorant Syllabification
uíŋələ	məsésəbə	Schwa Epenthesis

3.9 Summary

The complexities of the phonological rules of Palauan reside mainly in the processes initiated by the stress placement. The several rules affecting unstressed single vowels, unstressed vowel sequences and glide plus vowel sequences all operate to produce schwas and single vowels on the surface. A consistent analysis of the phenomena requires simultaneous consideration of the shape of the underlying forms and of the effects of the phonological rules on them. These in turn require that we be able to recognize the same underlying form in different surface shapes, as, for example, the possessive alternations frequently cited in this chapter and the last.

It is even more crucial to have criteria for recognizing underlying forms in the case of the verbs, since they have more morphological complexity than the nouns and surface in a greater variety of shapes. In order to determine when we have different verbs in the same morphological environments we must have criteria for determining the underlying form of the affix in question.

Subsequent chapters will discuss a variety of affixes and their syntactic and semantic functions, as well as whatever exceptional phonological properties they may have. Having established an outline set of phonological rules which apply productively throughout the whole language, we now have some grounds for establishing what is exceptional in the verb affixes.

FOOTNOTES TO CHAPTER III

[1]Discussions with Gary Parker and Jo-Ann Flora helped in the preparation of this chapter and Chapter II.

[2]This was brought to my attention by Jo-Ann Flora (personal communication).

IV. STATIVES

4.0 Introduction

This chapter is concerned with verbs which are [+Stative]. The feature Stative is discussed in 4.1. Those verbs which are inherently stative and marked with no affix are discussed in 4.2. The subject of 4.3 is the set of stative verbs which are marked with the verb marker /mV-/. Those which require the affix /bV-/ are mentioned in 4.4. The stative affixes which attach to other kinds of bases are presented in 4.5. These include the resultative stative affix /-l-/, the anticipative stative affix, which has two forms, /-Vl/ and /-alVl/, the abilitative stative affix /bVkV-/ and the habitual stative affix /sVkV-/. The process of anaphoric deletion, which causes some stative verbs to acquire lexical entries as nouns, is discussed in 4.5.3. The abilitative and habitual affixes, presented in 4.5.5, are found to contrast on very few bases.

4.1 The Feature Stative

All lexical items which are [+V] will be either [+Stative] or [-Stative]. This is a syntactic property which for Palauan is not exactly the same as that proposed in Lakoff 1966 for English. Lakoff claims that two features, Stative and Adjectival, are necessary to accurately specify English verbs (including adjectives). Examples of verbs

which are [-Stative, -Adjectival] are play, run; those which are [-Stative, +Adjectival] include careful, noisy. Examples of [+Stative, -Adjectival] verbs are know, believe, and the final classification, [+Stative, +Adjectival] includes tall, green. I can find no convincing grounds for including a subclass of verbs which are adjectives in Palauan; all necessary distinctions can be made with the feature Stative. All stative verbs in Palauan have a distinct past tense form: the auxiliary mle precedes the verb. In contrast, the past tense of non-stative verbs is marked with the infix /-il-/, to be discussed in 5.2. All [-Stative] transitive verbs have a progressive form, marked with the prefix /l-/, whereas [+Stative] verbs never take this affix. Nor do [+Stative] verbs take the perfective suffixes, with one exception, to be discussed. Some classes of stative verbs take the verb marker /mV-/, but the rest do not. There is therefore ample syntactic evidence for a class of [+Stative] verbs. The affixes which the [-Stative] verbs take will be discussed in the next chapter.

The feature [+Stative] will be in the lexical entries of some verb bases and some affixes. Those bases which are so marked will always surface as [+Stative] verbs unless they take one of the [-Stative] affixes, for example the causative affix. Those affixes which are entered as [+Stative] will derive [+Stative] verbs from whatever

bases they attach to.

4.2 Unaffixed Statives

There are several classes of verb bases which will be specified [+Stative] in the lexicon. Some can surface unaffixed; they look most like English adjectives. They include the following:

/wuŋil/ 'good'

/klVbokVl/ 'beautiful'

/kVrkikVl/ 'careful'

/dʔudʔ/ 'dirty'

/sVkool/ 'playful'

These occur unaffixed in the present tense:

(1) a Droteo a səkool
sVkool
playful

'Droteo is playful.'

(2) a Droteo a mle səkool
mle sVkool
past playful

'Droteo was playful.'

They require the auxiliary mle in the past, as 2 demonstrates.

A few stative bases can optionally occur with the first syllable reduplicated. This does not seem to have any function; it is one of the many examples of vestigial reduplication which we encounter throughout the investi-

gation of the verb morphology of Palauan. Some examples of underlying forms and surface forms are:

/kedeb/ 'short', kədeb, kekədeb

/kyoŋl/ 'dirty', kioŋəl, kikioŋəl

/kemaŋVt/ 'long, tall', kekəmaŋət, kəmaŋət

Some stative verbs pertaining to size and shape surface unaffixed when the subject is singular, but obligatorily contain a prefix when plural.

(3) a mlai a klou
mlay klow
canoe big
'The canoe is big.'

(4) a mlai a məklou
mlay mV#klow
big (plural)
'The canoes are big'

The prefix in məklou appears to be the same as the verb marker, to which we shall return shortly. Here it has a quite specific function: to mark plurality of the subject. Further examples of bases which alternate in this way are:

/kekrei/ 'small', kekərei, məkekərei

/ʔVtŋaid/ 'thin', ʔətŋaid, məʔətŋaid

/kemaŋVt/ 'long', kəmaŋət, məkəmaŋət, kekəmaŋət, məkekəmaŋət

The prefix mə- marking plural is not restricted to statives. It also occurs on related nouns, for example:

/kemaŋVt/ 'long, tall', kləmaŋət 'height',
məkləmaŋət 'height' (plural)

The ke- sequence occurs initially in all of the bases which reduplicate and/or take /mV-/ in the plural, excepting /kyoŋl/ 'dirty', and /ʔVtŋaid/ 'thin'. This is possibly a fossilized stative affix of some kind.

There is a class of verbs which specify the position of physical objects, which must have two lexical entries, one containing [+Stative] and the other containing [-Stative]. These include the following:

/dVŋʔokVl/ 'sit, sitting'
/dʔor/ 'stand, standing'
/wVtubwaʔV/ 'kneel, kneeling'
/dŋarʔ/ 'right side up'
/ʔbeʔb/ 'upside down'

They may surface unaffixed, as stative verbs:

(5) a Droteo a dəŋʔokl er tiaŋ
dVŋʔokVl tya
sitting here
'Droteo is sitting (seated) here.'

The past tense is marked with mle:

(6) a Droteo a mle dəŋʔokl er tiaŋ
mle dVŋʔokVl tya
past sitting here
'Droteo was sitting (seated) here.'

The non-stative form will have the normal past tense marker

-il- after the initial consonant of the stem.

(7) a Droteo a dilaŋʔokl er tiaŋ
d-il-VŋʔokVl
sitting (past)
'Droteo was sitting here.'

Sentences 6 and 7 are slightly different in meaning. They would, for example, be used to answer different questions. Sentence 6 would be used as the answer to a question like 'Where was Droteo sitting (seated)?'. Sentence 7 would answer 'What was Droteo doing (at a particular time)?'. There are a few other verbs which must be entered as both [+Stative] and [-Stative]. They will be discussed shortly. The set presently under discussion is odd since its members do not require the verb marker /mV-/ when they are non-stative. Normally, all non-stative verbs require this affix (see Chapter 5).

The non-stative sentence of the following pair of examples is transitive:

(8) a olakaŋ a mle daŋarʔ
wVlkaŋ mle dŋarʔ
pot past right side up
'The pot was right side up.'

(9) a Droteo a dilaŋarʔ a olakaŋ
d-il-ŋarʔ wVlkaŋ
right side up (past) pot
'Droteo left the pot right side up.' (that is, he did

not change its position)

Normally /-il-/ does not affix to stative verbs at all, and it occurs with verbs that take the active affixes to be discussed in the next chapter.

4.3 Statives with VM

Some stative verbs take /mV-/, the obligatory verb marker. Its phonological alternants will be discussed in the following chapter. It is not normal for stative verbs to take this affix, so the information that they do so must be recorded in their lexical entries. Some such bases correspond to Lakoff's [+Stative, -Adjectival] classification for English since they take objects or complements. Some examples are:

/dŋey/ 'know'

/duʔ/ 'know how'

/titur/ not know how'

An example in the past tense is:

(10) a Droteo a mle mədəŋei a təkoi er a Belau

mle mV#dŋey tVkoy

past VM know language Palau

'Droteo knew Palauan.'

This verb is odd for a stative verb since it has a perfective form, which appears to be phonologically unpredictable: -liy is suffixed for third person singular object. The regular perfective forms will be discussed in 5.6.2. This form is used in the sense of 'know a person', and also can take

complement sentences:

(11) a Toki a mədəŋəliy a Droteo
mV#dŋey#iyV
'Toki knows Droteo.'

(12) kə mədəŋəliy əl kmo a Droteo a mei
kaw mV#dŋey#iyV el kmo mey
you know complementizer come
'Do you know that Droteo is coming?'

Further members of this class which are more like English adjectives rather than English stative verbs (like know) in that they do not occur in transitive sentences are:

/kŋit/ 'bad'
/dai/ 'poor'
/rau/ 'rich'
/kryos/ 'precious'

Example sentences are:

(13) a udoud a məkreos
wudowd mV#kryos
money VM precious
'The money is precious.'

(14) a Droteo a mle məkŋit a reŋul
mle mV#kŋit reŋu#lV
past VM bad heart-his
'Droteo was unhappy.'

Sentence 14 illustrates a type of idiom very common in Palauan. Verbs of feeling are often expressed with a stative

or intransitive verb plus the possessed form of /reŋu/ 'heart, spirit'. These are topicalized forms of sentences like the following:

(15) a rəŋul a Droteo a məkŋit
reŋu-lV mV#kŋit
heart-his VM bad
literally: 'Droteo's heart is bad.'

The subject of this sentence is a rəŋul a Droteo 'Droteo's heart'. Other examples of the same topicalization used non-idiomatically are:

(16) a Droteo a mərur a ŋələkel
mV#rur ŋalVk#elV
VM ashamed child-his
'Droteo's child is ashamed.'

(17) a Droteo a mədakt a ŋələkel
mV#dakt ŋalVk#elV
VM afraid child-his
'Droteo's child is afraid.'

These are topicalized versions of the following, respectively:

(18) a ŋələkel a Droteo a mərur
'Droteo's child is ashamed.'

(19) a ŋələkel a Droteo a mədakt
'Droteo's child is afraid.'

The stative bases in these sentences are:

/rur/ 'ashamed'

/dakt/ 'afraid'

Other examples of the idiomatic use of this device with /reŋu/ 'heart, spirit' will be given in later chapters.

Sentences 16 and 17 contrast with the following sentences only by the presence or absence of er, which plays a crucial role since it is the only surface marker of two quite distinct constructions.

(20) a Droteo a mərur er a ŋələkel
mV#rur ŋalVk#elV
VM ashamed child-his
'Droteo is ashamed of his child.'

(21) a Droteo a mədakt er a ŋələkel
mV#dakt ŋalVk#elV
VM afraid child-his
'Droteo is afraid of his child.'

These are transitive stative sentences; the object NP here must be marked with er (normally used only for specific objects) or else the sentences are given the interpretation of 16 and 17. In cases where an interpretation like 16 and 17 is not possible (that is, in those cases where the NP following the verb is not a possessed human noun) transitive sentences may or may not take er, depending on whether or not the object is specific.

(22) a Droteo a mədakt a dərumk
mV#dakt dVrumk
VM afraid thunder
'Droteo is afraid of thunder (in general).'

(23) a Droteo a mədakt er a dərumk
mV#dakt dVrumk
VM afraid thunder
'Droteo is afraid of the thunder.'

Another class of stative verbs which require /mV-/ has base forms which also occur as nouns. The form mədakt, cited in the above examples, is a member of this class.

/dakt/ dakt 'fear', mədakt 'afraid'

/yilkolVk/ ilkolk 'darkness', milkolk 'dark'

/ʔed/ ʔed 'low tide', məʔed 'shallow'

/kryor/ kərior 'misfortune', məkərior 'unfortunate'

/sawl/ saul 'tiredness, trouble', məsaul 'tired'

/ʔuu/ ʔuu 'shadow', məʔuu 'shady'

Their lexical entries will show them to be both nouns and verbs, that is [+N, +V].

The verb marker sometimes metathesizes with the initial consonant of the base, as will be described in the next chapter. Some bases which require this metathesis are both [+Stative] and [-Stative], since they can take both mlɛ and -il- in the past. The phonological complexities involved here will be discussed in 5.3. Some examples of such bases are:

/seʔer/ 'sick' smeʔer

/ʔarm/ 'be in a state of hardship' ʔuarm

The distinction between the following two sentences is analogous to that between 6 and 7. Sentence 24 contains a sta-

tive verb, whereas 25 contains a non-stative verb.

(24) a Droteo a mle sme?er
mle mV#se?er
past VM sick
'Droteo was sick (in the state of being sick).'

(25) a Droteo a sile?er
s-il-e?er
sick (past)
'Droteo was sick (activity of being sick).'

We saw previously that some stative verbs can be transitive, that is, they can have surface objects, as in 20-23. The following sentences have a NP following the verb which is not an Object: [1]

(26) a Droteo a sme?er er a tretr
mV#se?er tretr
VM sick cold
'Droteo is sick with a cold.'

(27) a Droteo a ?uarm er a dələŋ?əklel
mV#?arm dVlVŋ?okl
VM in hardship living conditions
'Droteo is in hardship because of his living conditions.'

These sentences must contain er; it functions here as a preposition marking a certain case relationship between the following NP and the verb, and does not mark specificness of the object. The different functions of er show that the

case relationships of the NP's in 20-23 and 26-27 are different. In the former examples we seem to have a structure with underlying Object (er a ŋələkel, (er) a dərumk). In 26-27, however, the NP following the verb is more properly a Cause, or possibly an Instrument (see Fillmore 1968:24) noun phrase.

4.4 Statives with /bV-/

The final class of stative verb bases to be discussed take /bV-/ instead of /mV-/. This is a fairly small class, and most members have base forms which also occur as nouns:

/ʔesu/ ʔəsul 'its newness', bəʔes 'new'

/ralm/ ralm 'water', bəralm 'watery'

/sokVl/ sokəl 'ringworm', bəsokəl 'infected with ringworm'

/ʔod/ ʔoʔod 'incense', bəʔoʔod 'fragrant'

/ʔas/ ʔas 'soot', bəʔaʔas 'sooty'

The last two examples require the base to be reduplicated before the prefix can be added. A few forms also occur unaffixed as statives:

/ʔeleleu/ ʔeleleu 'pale', bəʔeleleu 'white'

/bubon/ bubon 'senile', bebubon 'somewhat senile'

/ʔaʔau/ ʔaʔau 'dried up (of nuts)', bəʔaʔau 'empty'

The meanings of the forms with /bV-/ here are quite unpredictable. In bebubon 'somewhat senile' /bV-/ surfaces as [be-] rather than the normal [bə-]. This may

be evidence that the underlying vowel in the prefix is e, or a separate prefix may be involved. At any rate it is an idiosyncratic property of these bases that they surface with be- rather than bə-. A few forms do not surface without /bV-/:

/lils/ bəlils 'high, piercing'

/bulis/ bebulis 'crazy'

/timl/ bətiməl 'slow'

The last example, /timl/, also occurs with /bVkV-/, the abilitative stative affix, to be discussed in 4.5.2. Therefore we are justified in positing the base /timl/. Since the other examples cited here do not occur without /bV-/ it is possible that they are stative verbs which just happen to begin with b.

The affix /bV-/ is not very productive, and must be considered syntactic rather than substantive (see Chapter I) since it adds no identifiable meaning. It is a verb marker, like /mV-/, but far less productive. Verbs that contain /bV-/ are always stative. The information that a base can or must take this affix will be included in the lexical entry.

4.5 Stative Affixes

A great many more stative verbs occur in Palauan than the inherently stative verbs that I have discussed so far, due to the presence in the language of several stative affixes which are very productive. They are:

/-l-/ resultatiwe stative

/-Vl, -alVl/ anticipative stative

/bVkV-/ abilitative stative

/sVkV-/ habitual stative

These affixes must be present in the deep structure since they have semantic content. I analyze them as underlying verbs. They affix regularly to verb bases and, in some cases, to nouns as well. I shall discuss each of them in turn in this section, with reference to their semantic, syntactic and phonological properties.

4.5.1 Resultative Stative /-l-/. The resultative stative is easy to recognize, being an infix /-l-/ which is inserted after the first consonant of the verb base. All verb bases appear to be consonant-initial since the ŋ epenthesis rule has restructured forms which originally began with a vowel (see 2.7). The following are some examples of resultative stative forms:

Base	Resultative Stative
ŋata?	ŋlatə? 'cleaned'
duba	dəlub 'poisoned'
?atu	?əlat 'smoked'
bayul	blail 'clothed'
keri	kler 'asked'
btar	bl̥tar 'swung'
ŋeri	ŋler 'answered'

Schwa Epenthesis (see 3.8) applies in the case of dəlub

'poisoned' and ʔəlat 'smoked'; this rule always applies to homorganic clusters and clusters including ʔ. The only environment in which this affix does not surface as -l- is before or after r, in which case it assimilates and geminate r results. This is pronounced either as a voiced retroflex trill or as a voiced retroflex fricative, in the same way as the syllabic r discussed in 3.7. Some examples are:

Base	Resultative Stative
reŋVs	rreŋəs 'heard'
briid	brriid 'scattered'

The resultative stative morpheme affixes to any active (or [-Stative]) transitive base, and is used to ascribe to the Object NP a state resulting from the activity specified by the verb base. An Agent NP is not permitted in such stative sentences as the following:

(28) a Droteo a mle bloes
mle b-l-oes
past shoot (resultative)
'Droteo was (injured from being) shot.'

(29) a ŋikəl a ʔəlat
ŋikVl ʔ-l-atu
fish smoke (resultative)
'The fish is smoked.'

The following ungrammatical sentence results when an Agent NP is added to 28:

(30) *a Droteo a mle bloes er a Toki

'Droteo was shot by Toki.'

An Instrument NP can be added to such sentences, for example:

(31) a ŋikəl a ʔəlat er a orrəŋəlek

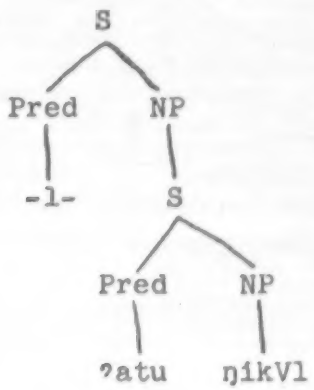
ŋikVl ʔ-l-atu wVrraŋl#ekV

fish smoke (resultative) smokehouse-my

'The fish is smoked in (with) my smokehouse.'

Such sentences will be mentioned again in 5.5.

Since I am analyzing these affixes as higher verbs the phrase marker for the deep structure of 29 will be as follows:



The lower sentence is intransitive but includes an active transitive verb and what would be its Object in a transitive sentence. I call such sentences 'ergative' (see 5.5) since an Instrument or Agent NP cannot be the subject, and, if present they are both marked with the preposition er. In this sentence there is a higher verb /-l-/ containing

the feature [+Stative]. This feature will be incorporated into the complex predicate arising through Predicate Raising. It will determine that the surface verb is stative rather than active.

4.5.2 Anticipative Stative /-Vl/ and /-alVl/. The anticipative stative is more complex phonologically than the resultative since it has two underlying forms, /-Vl/ and /-alVl/. The former is the older and more conservative form but the latter is now becoming more common. The form /-Vl/ is important evidence for determining the underlying forms of verbs that end in a consonant, since the final syllable of the base will be stressed whereas the a in /-alVl/ is always stressed, being penultimate. In the cases where the innovating form /-alVl/ has completely replaced /-Vl/ we have to conclude that the underlying form of the base has changed since the vowel in the last syllable is no longer recoverable. With the conservative form vowels which are final to the base will also surface since the vowel deletion rule will not apply to them. Because of the stress assignment the morphophonemics of verbs containing this form of the affix are very complex; this is probably a factor in the changing of the underlying form of the affix. The following two derivations illustrate how the distinct surface forms with each form of the affix arise:

kemod#Vl	kemod#alVl	
kemódVl	kemodálVl	Stress Assignment
	kemodáll	Vowel Deletion
kəmódəl	kəmədáll	Reduction of Single Vowels

The variant surface forms of the anticipative stative for this verb, kəmodəl and kəmədall, are paralleled by the following examples:

Base	-Vl	-alVl	
reŋod	rəŋodəl	rəŋədall	'to be tied (carefully)'
leʔot	ləʔotəl	ləʔətall	'to be tied (generally)'
kimud	kəmudəl	kəmədall	'to be cut'
kal	kall	kəlall	'to be eaten'
ŋetom	ŋətoməl	ŋətəmall	'to be licked'
luʔus	ləʔukl	ləʔəsall	'to be written'
ŋataʔ	ŋətaʔəl	ŋətəʔall	'to be cleaned'

These forms are all regular. Underlying /s/ surfaces as k before consonants as in ləʔukl; the vowel in the suffix must be deleted before this rule can apply. The alternation is probably due to the fact that Palauan /s/ reflects PAN *y (Dyen 1971:251-2). This same alternation is identifiable in the forms of /sal/ 'very'. It surfaces as sal after the negative verb, but as kmal elsewhere (with metathesized VM; see 5.3). A less regular example of the same alternation is the following: /boes/ 'shoot', anticipative stative forms beakl and bosall. The appearance of the a in beakl is quite unexpected. The base

form /boes/ allows all the other surface forms of this verb to be regularly derived. If we take the a in beakl as an underlying vowel this would entail an underlying form of the shape /boeas/ or /boyas/ (with /y/ becoming e because of the following low vowel, see 3.7). I know of no other case where an underlying sequence of three vowels is necessary; hence the former alternative looks suspicious. Since we also have no other case of a sequence of glide plus vowel deleting (/ya/ will have to delete in order to derive bosall), I take the underlying form in this case to be /boes/. The a is inserted by an idiosyncratic property of this base in the conservative anticipative stative form.

Another irregularity is the conservative form for 'drink', ilúməl. Other forms of this verb have an initial ŋ because of the restructuring process discussed in 2.7, for example ŋlim, resultative stative, and ŋmall, anticipative stative (innovating form). If we want to posit one underlying form for this verb we will encounter much difficulty. The lack of an initial ŋ in ilúməl and the large amount of reduction in the other forms seem inexplicable. The form iluməl suggests an underlying form /ilum/, reminiscent of PAN *inum. If this were the underlying form we would have to explain the odd properties of all the alternations which seem to be very reduced forms. All the forms except the perfective third person singular

form (see 5.6.2) are quite regular if the underlying form is taken to be /ŋim/. The form ilumə̀l will have to be a separate lexical entry since it is clearly a relic form. Its possessed alternant also exhibits some idiosyncratic reduction: imə̀lék 'my drink'; here the whole syllable lu has been lost. The derivation of the innovating form for this verb is as follows:

ŋim#alVl	
ŋimálVl	Stress Assignment
ŋmálll	Vowel Deletion
ŋmálll	Sonorant Syllabification
ŋmálləVl	Schwa Epenthesis

The schwa which is always epenthesized at the end of such forms because of the final consonant cluster (see 3.8) will not always be shown.

Such alternations as the following (mentioned in 2.2) are the only forms which give evidence for positing underlying vowels which coincide with the reconstructions:

/bayul/ 'clothe', biúll 'to be clothed', PAN *balun

/rayal/ 'walk, travel', reáll 'to be travelled', PAN *ɖalan or *dalan

Dempwolff's symbol ɖ represents a palatal stop. Since this type of alternation is becoming less common with the innovating form of the anticipative stative suffix some of the evidence for recognizing PAN reflexes in Palauan is being lost.

There is no semantic difference between the two forms of the suffix. In general, it appears that younger speakers will tend to use more forms with /-alVl/ than older speakers. However, some verbs seem to favor either the conservative or the innovating form and for many both forms are in current use. In some cases I could elicit only the newer form, for example:

/briid/ 'scatter', bridall 'to be scattered'

/did/ 'walk on', didall 'to be walked on'

If only the innovating form occurs, as in these cases, evidence for positing underlying vowels in the final syllable of some bases has been lost, and the form has been restructured.

Bases with underlying final vowels take the conservative form of the anticipative stative affix, /-Vl/. My analysis here is based on Carlson MS c. The unspecified vowel of the suffix surfaces as a copy of the final vowel of the base. This is an idiosyncratic property of the affix, and must be recorded in its lexical entry. This morpheme-particular rule of absolute vowel assimilation will operate before any of the regular phonological rules affect the string. I represent this in derivations by maintaining the morpheme boundaries until the regular rules apply. Derivations for anticipative stative forms of vowel-final bases will be as follows, with the bases /ʔatu/ 'smoke' and /leŋi/ 'borrow':

ʔatu#Vl	leŋi#Vl	
ʔatu#ul	leŋi#il	Vowel Assimilation
ʔatúul	leŋíil	Stress Assignment
ʔətúul	ləŋíil	Reduction of Single Vowels

This is one of the several morphological alternants in which underlying vowels occur; others are possessed nouns and third person singular perfective forms (see 5.6.2).

When the underlying final vowel is a the anticipative stative form will end in either -aol or -all. The former is the conservative form; the rule of Vowel Assimilation which this affix undergoes produces o rather than a in these cases, for no apparent reason. However, it seems that these forms are just as likely to take the innovating form. Some a-final bases and their anticipative stative forms are as follows:

Base	-Vl	-alVl
tuba	tbaol	tball 'to be spat'
duba	dbaol	dball 'to be poisoned'

The same constraints operate for the occurrence of the anticipative stative as for the resultative stative; they affix to transitive verb bases. The anticipative ascribes to the Object NP a state anticipating the action specified by the verb. The anticipative occurs in simple sentences such as the following:

(32) a ŋikəl a ʔətuul
ŋikVl ʔatu#Vl
fish smoke-anticipative
'The fish is to be smoked.'

(33) a ʔiuk a mle kəmudəl
ʔuyu#kV mle kimud#Vl
hair-my past cut-anticipative
'My hair was to be cut.'

4.5.3 Anaphoric Deletion. This dissertation is not in general concerned with syntactic processes, but it is necessary to mention the phenomenon of anaphoric deletion which causes stative verbs and other items to function as nouns in the surface structure of some Austronesian languages. For example, the following sentence contains ʔəlat, resultative stative of /ʔatu/ 'smoke', in a noun slot:

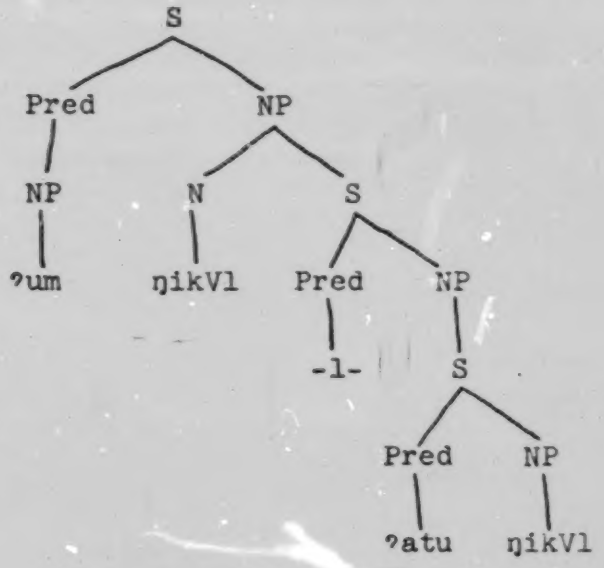
(34) a ʔəlat a ʔum
ʔ-l-atu ʔum
smoke (resultative) type of fish
'The smoked (thing) is ʔum.'

As we would expect, a stative verb can also occur in a related sentence as a modifier of a noun:

(35) a ʔəlat el ŋikəl a ʔum
ʔ-l-atu ŋikVl ʔum
smoke (resultative) fish
'The smoked fish is ʔum.'

The particle el functions like the Tagalog ligature

(Bloomfield 1917: 318-26); it occurs between the modifier and the head noun. Sentences 34 and 35 can be derived from an underlying structure with a relative clause:



Sentence 34 can be considered a further step from the structure corresponding to 35. This is the very general process of anaphoric deletion, which deletes the head noun in a noun phrase if its referent is contextually clear.

If stative verbs are used often enough in this anaphoric way it is reasonable to hypothesize that they come to have lexical entries as nouns. For example, kall, anticipative stative of /kal/ 'eat', is commonly used to mean 'food', and ilumǝl, anticipative stative of /ŋim/ 'drink' is commonly used for the noun 'drink'. They both have possessed forms: imǝlek 'my drink' and kǝlek 'my food'; only nouns can have possessed forms. Such forms will have

to have separate lexical entries specifying that they are nouns. This will then account for many idiomatic expressions which are nouns although originally were stative verbs.

4.5.4 Resultative and Anticipative Affixes on One Base. Some bases can take both the resultative and the anticipative affixes at once. No explanation for this is apparent to me, for the resulting meaning is generally no different from the resultative form, for example:

/kimud/ 'cut', kləmudəl 'cut' (resultative)

/leʔot/ 'tie', llaʔotəl 'tied'

/reŋod/ 'tie', rrəŋodəl 'tied'

However, many such forms are idiomatic nouns. For example, from the base /ʔatu/ 'smoke', ʔəlat (resultative stative) is used as a stative verb or in anaphoric constructions to refer to anything which has been smoked or dried in the smokehouse (for example, fish and tapioca). The form ʔəltuul, which contains the affixes /-l-/ and /-Vl/, is an idiomatic development meaning 'smoked fish'; in addition, it can be used synonymously with ʔəlat. From the base /bayul/ 'clothe, wrap', the resultative form blail is used of anything clothed or wrapped. The form with both affixes, bliull, can be used in the same way as blail or as a noun meaning 'wrapped tapioca'. Similarly, from the base /luʔus/ 'write', llaʔukl can mean the same as the resultative stative lluʔəs, but it also has a use

as an idiomatic noun meaning 'handwriting'. In llə?ukl /s/ becomes k before another consonant, as discussed in 4.5.2.

4.5.5 Abilitative and Habitual Statives. There are two more stative affixes to be discussed: /bVkV-/ and /sVkV-/. These have overlapping semantic functions, abilitative and habitual respectively, and contrast on very few bases. They affix to active verb bases and some nouns. Phonologically they usually surface as bəkə- and səkə-. Some speakers seem to make a more consistent distinction between them than other speakers do. Probably the distinction is being lost since many bases can take both affixes and the resulting forms are synonymous. It is difficult to state generalizations on this subject since the data are highly irregular. When the affixes do contrast, the abilitative, /bVkV-/, has the meaning 'be good at, have ability in' the action specified by the verb base. The habitual, /sVkV-/, has the meaning 'be given to, like to, be prone to'. In many cases it is impossible to give an elegant English translation. Two clear cases of contrast between these affixes are the following:

/rurt/ 'run', bəkərurt 'fast at running', səkərurt 'given to running'

/tuŋl/ 'smell', bəkətuŋəl 'having a good sense of smell', səkətuŋəl 'liking to smell'

Most bases take one affix or the other and the

resulting meaning is generally habitual rather than abilitative. The following are some examples:

/tVkoy/ 'talk', bəkətəkoi 'talkative'

/boes/ 'shoot', səkəboes 'given to shooting'

/ŋim/ 'drink', səkəŋim 'prone to drinking (alcohol)'

/tawt/ 'aim', bəkətaut 'good at shooting'

/ʔiwayw/ 'sleep', səʔiwayəwə 'prone to sleep excessively'

In the last example /sVkV-/ surfaces in an odd phonological shape, as sə- rather than səkə-.

Many bases have to be at least partially reduplicated before either of these prefixes can be added. I have already mentioned the phenomenon of vestigial reduplication in Palauan in 4.2, and we will encounter it again in Chapter VII. Apparently reduplication had a systematic function at an earlier stage of the language, and this remains in a few alternations of some bases. The only case I know of where it has obvious semantic content is the reduplicated form of /suwob/ 'study, imitate' with /bVkV-/ and /sVkV-/: bəkəsusuub means 'scholarly' (but less so than bəkəsuub) and səkəsusuub means 'given to imitating' (but less proficient at it than səkəsuub). Some further examples of bases which must be reduplicated in order to take either of these affixes are the following:

/keri/ 'ask', səkərker 'given to asking questions'

/laŋl/ 'cry', bəkəlilaŋəl 'prone to crying'

/bes/ 'forget', bəkəbəsbes 'forgetful'

/seʔer/ 'sick', bəkəsəʔəseʔer 'sickly, prone to sickness'

/sel/ 'short of breath', bəkəsəlsel 'always short of breath'

These affixes usually attach to active bases in the same way as the resultative and anticipative affixes. However, /bVkV-/ and /sVkV-/ do not require the base to which they attach to be transitive although the resultative and anticipative affixes do. The affixes presently under discussion can attach to intransitive and stative bases as well. Some examples with inherently stative bases are:

/dakt/ 'afraid', bəkədakt 'always afraid'

/sVkool/ 'playful', bəkəsəkool 'good at games'

/timl/ 'slow', bəkətiməl 'always slow'

Unexpectedly, a few nouns can also have habitual or abilitative forms. This seems to be a small class, and I do not know what its properties are. Two examples follow:

/sVʔVley/ 'friend', səkəsəʔəlei 'friendly, able to make friends easily'

/tyoʔl/ 'edible root', bəkətioʔəl 'prolific' (of root-bearing plants)

As we shall see in Chapter VI, many verb bases require the causative affix /wV-/, which normally surfaces as o-. When such bases take /bVkV-/ or /sVkV-/ the o surfaces:[2]

/dub?/ 'push', oldubə? 'push', səkodubə? 'prone to push people around'

/sis?akl/ 'teach', olsis?akl 'teach', səkosis?akl, bəkosis?akl 'good at teaching'

The o is unexpected, since no other affixes generally attach to these stative forms. In the case of causatives which are actually causative (as opposed to the cases just discussed where the causative affix is apparently required for syntactic purposes only) the o also surfaces, if the base takes either causative affix (ol- or oməɣ- in the progressive):

/rur/ 'run', orrurt 'make something run' səkorurt 'able to run things (projects, etc)'

/kal/ 'eat', oməka 'feed', səkoka 'generous with food'

/rayal/ 'walk', oməkrael 'lead, advise', bəkorael 'good advisor'

/bayul/ 'clothe', oməkbail 'clothe (someone)', səkokəkbail 'generous with clothing'

These bases can also occur with the abilitative and habitual affixes only, for example səkərurt 'prone to run a lot', səkərael 'prone to travel a lot'. Such forms contrast with the causative forms in the following way:

(36) a Droteo a səkərael
sVkV#rayal
habitual-walk, travel
'Droteo travels a lot.'

(37) a Droteo a bəkorael
bVkV# wV# rayal
abilitative causative walk
'Droteo is a good advisor.'

The causative affixes are phonologically and morphologically complex; see Chapter VI for details.

As we have seen, there is a great deal of morphological irregularity associated with /bVkV-/ and sVkV-/. The lexical entries for bases which can take one or both of them will have to include such information as:

(a) whether the base takes /bVkV-/ or sVkV-/ or both
(b) if it takes both, whether they contrast or are synonymous
(c) whether the base reduplicates
(d) what other affixes (for example, the causative) are required.

This information will be expected to vary from speaker to speaker since the status of these affixes seems to be somewhat unstable; possibly they are at present changing. Probably both affixes will eventually merge with the habitual function; bəkə- and səkə- will then be 'allomorphs'. Their similar phonological shape suggests that

each actually consists of two affixes, and they have the form /kV-/ in common. This may have been the situation historically, but there is no reason to suppose that it still is.

4.5.6 /bVkV-/ As a Stative Affix of Smell. There is an unrelated function of /bVkV-/: a stative affix referring to smells. It attaches to nouns quite productively:

/ʔluʔ/ 'coconut oil', bəkəʔəluʔ 'smell of coconut oil'

/ryaml/ 'jack fruit', bəkəriaməl 'smell of jack fruit (sweaty)'

/wel/ 'turtle', bəkəwel 'smell of turtle' (after eating turtle)

/katu/ 'cat', bəkəkatu 'smell of cat' (after handling a cat)

Others are more idiomatic:

/baw/ '(any kind of) smell', bəkəbau 'smell of rotten meat or fish'

A few cases have no independently occurring bases:

bəkəsəŋorʔ 'smell of pig's house'

bəkərrius 'smell of saliva'

Examples of these forms in sentences are:

(38) a kləŋois a bəkəbau

klVŋois bVkV#baw

cooked meat smell

'The kləŋois smells rotten.'

(39) a ŋaləkˀ a bəkərrius

ŋalVkˀ bVkV#rrius

child smell of saliva

'The child smells of saliva.'

FOOTNOTES TO CHAPTER IV

[1]Fillmore 1968:25 uses the term 'Objective' the way I use the term 'Object', to refer to the most semantically neutral case. It can be distinguished from the other cases which are marked with er and can occur immediately after the verb, such as Locative and the Cause NP's of sentences 26-7 by the function of er: only Object NP's can be marked as specific (with er) or non-specific (without er), whereas er is always obligatory with the other cases.

[2]An o also surfaces when either of these prefixes attach to the bases which require the VM to surface as o (see 5.4), for example:

/kwadi/ 'fight', okoad 'fight', səkokoad 'prone to fighting', bəkokoad 'good at fighting'

/diu/ 'shout', odiu 'shout', səkodiu 'given to shouting'

With my analysis of the o as a surface variant of the VM, I am unable to explain this phenomenon. It is possible that the o has some other source, for example the causative affix /wV-/; these verbs have no other properties of causatives, however.

V. ACTIVE VERBS

5.0 Introduction

In this chapter I shall discuss those affixes which occur on verbs in active sentences, excluding causative and reciprocal affixes, which will be discussed in the following chapters. Those bases and affixes which are [-Stative] will be examined here. All verb forms cited in this chapter require the verb marker /mV-/; this affix was introduced in Chapter IV as an obligatory element on some stative verbs, for example mədakt 'afraid', /dakt/. The verb marker (VM) is discussed in 5.1 and 5.4; its peculiar property of metathesizing with the initial consonant of the base is discussed in 5.3. The past tense infix /-il-/ is mentioned in 5.2. The use of the VM in ergative sentences is the subject of 5.5. Transitive sentences with Agent subjects require either the progressive or perfective aspect to be marked, as we shall see in 5.6. Additional affixes, to be discussed in 5.7, are the predictive marker /-ú/ for events that the speaker expects in the immediate future, and /-á/, the inchoative marker. All these affixes will be discussed with respect to their phonological form (which, in almost all cases presents much complexity and irregularity), and their semantic and syntactic functions.

5.1 Verb Marker

The verb marker /mV-/ adds no semantic information

to a verb so it can be added by transformation rather than being in the deep structure. It surfaces as mə-, as we would expect, in the following intransitive sentences:

(1) a Droteo a mə iwayəwə
mV ʔiwayw
VM sleep
'Droteo is sleeping.'

(2) a Droteo a mə ael
mV rayal
VM walk
'Droteo is walking.'

Because the verb base in 3 below begins with y, the vowel is deleted, causing the VM to surface as m-.

(3) a Droteo a mi il
mV yilil
VM play
'Droteo is playing.'

5.2 Past Tense /-il-/

For intransitive verbs, the only obligatory marking is /mV-/. All active, or [-Stative], verbs take an infixed past tense form /-il-/ which is inserted after the initial consonant of the string, after the m in these cases.

(4) a Droteo a mi ʔiwayəwə
m- l-V#ʔiwayw
VM sleep (past)
'Droteo was sleeping.'

(5) a Droteo a mirrael

m-il-V#rayal

VM walk (past)

'Droteo was walking.'

In 5 the l of the affix assimilates to the following r. The infix /-il-/ is not the only way of expressing past tense, however. In Chapter IV I discussed some cases where both /-il-/ and the stative past auxiliary /mle/ can occur with one base with very little or no difference in meaning. The same phenomenon obtains for the base /ʔiwayw/ 'sleep' since it can be stative. Sentence 6 is synonymous with 4.

(6) a Droteo a mle məʔiwayəwə

mle mV#ʔiwayw

past VM sleep

'Droteo was sleeping.'

Some bases can take either /mle/ or /-il-/ in the past tense, but with a semantic difference. Some examples follow:

(7) a Droteo a mle məkar

mle mV#kar

past VM awake

'Droteo was awake.'

(8) a Droteo a milkar
m-il-V#kar
VM awake (past)
'Droteo woke up.'

(9) a o?ik a mle məkekad
wa?i#kV mle mV#kekad
leg-my past VM itch
'My leg was itching.'

(10) a o?ik a milkekad
wa?i#kV m-il-V#kekad
leg-my VM itch (past)
'My leg got itchy.'

For such verbs the lexical entry will specify that they can be either [+Stative] or [-Stative]. The [-Stative] verbs will take /-il-/ in the past and will have an inchoative interpretation. This is not possible for many verb bases, however.

A further way to express past tense is with the infix /-l-/. The following sentence appears to be synonymous with both 4 and 6:

(11) a Droteo a mlə?iwayw
'Droteo was sleeping.'

I do not know how to characterize this affix. It may be a phonological variant of /-il-/, yet some speakers seem to feel that there is a definite semantic difference between, for example, sentences 4 and 11. I have not suc-

ceeded in isolating this difference, and will proceed on the assumption that /-il-/ is the past tense marker for active verbs.

5.3 Metathesis of VM

We saw in Chapter IV that some stative bases require metathesis of the verb marker (VM) with the initial consonant of the base; for example, sme?er is from the base /se?er/ 'sick'. The majority of intransitive active bases also require such metathesis.

Metathesis is an odd property of the VM;[1] later in this chapter we will encounter further cases where syntactic conditions require it to apply to transitive verbs as well. Examples of intransitive sentences containing verbs which require the VM to metathesize are:

(12) a Droteo a ʔəmiis
mV#ʔiis
VM escape
'Droteo is escaping.'

(13) a Droteo a rəmurt
mV#rurt
VM run
'Droteo is running.'

(14) a Droteo a lmaŋl
mV#laŋl
VM cry
'Droteo is crying.'

In the last example the vowel in the VM has deleted, allowing the Sonorant Syllabification rule to apply to the l (see Chapter III). In fact, a schwa appears between the initial consonant of the base and the m of the affix in just those cases where it would be required by the Schwa-Epenthesis rule anyway (see Chapter III for conditions). Therefore, it seems that the vowel in /mV-/ deletes before the metathesis takes place. A sample derivation, showing the odd rules undergone only by the affix (and no other lexical items) first, before the regular phonological rules, is:

mV#ʔiis	'escape'
mʔiis	Vowel Deletion
ʔmiis	Metathesis
ʔmíis	Stress Assignment
ʔəmíis	Schwa-Epenthesis

Very often the metathesized m becomes a w. This happens when there is a labial (b or m) somewhere in the base. This phenomenon will be discussed further in this chapter. Some examples of intransitive bases which undergo this rule are:

/sebk/ 'fly' suébək

/rebt/ 'fall' ruébət

/ʔarm/ 'be in hardship' ʔuárəm

By the Sonorant Syllabification rule (see Chapter III), the w syllabifies to u since a vowel follows. An example

derivation is:

mV#rebt 'fall'
mrebt Vowel Deletion
rmebt Metathesis
rwebt Denasalization of m (m to w)
rwébt Stress Assignment
ruébt Sonorant Syllabification
ruébət Schwa-Epenthesis

After the verb marker has metathesized the affix will only surface when there is no other prefix or infix on the stem. For example, the VM does not surface in forms marked with the past tense infix if metathesis occurs. Compare the following forms:

/sebk/ 'fly' silebək 'flew'
/rebt/ 'fall' rirebət 'fell'
/laŋl/ 'cry' lilaŋəl 'cried'

Some bases where metathesis does not occur are:

/ʔiwayw/ 'sleep' milaʔiwayəwə 'slept'
/rayal/ 'walk' mirrael 'walked'
/kar/ 'awake' milkar 'woke up'

In the latter examples the VM does not delete when the infix is added. This may be a morphological constraint, but it can be explained phonologically, and I adopt the latter solution. The past tense infix is always -il- on bases which require metathesis of the VM. The previously mentioned form of the past tense, /-l-/, does not occur

in these cases. As we shall see later in this chapter, the metathesized VM does not surface when followed by an unstressed high vowel (see 5.6.2).

The only other prefixes which can occur on an intransitive base marked with /mV-/ are the set of pronominal prefixes which are used in conditional clauses and elsewhere. They agree with the subject in person and in number:

(15) a kməʔiwayəwə ...
'If I am sleeping ...'

(16) a ʔoməʔiwayəwə ...
'If you (singular or plural) are sleeping ...'

(17) a ləməʔiwayəwə ...
'If he/she/they are sleeping ...'

(18) a dəməʔiwayəwə ...
'If we (inclusive) are sleeping ...'

(19) a kiməʔiwayəwə ...
'If we (exclusive) are sleeping ...'

In such constructions the VM remains if it is a prefix, as in the above examples. If the VM has metathesized it must delete; this is a morphological rather than a phonological environment for the deletion. The following sentences are examples of verbs with deleted metathesized VM in the environment of the pronominal prefixes:

(20) a ksebək ...
'If I am flying ...'

(21) a ləsebək ...

'If he/she/they are flying ...'

These prefixes are also used in certain embedded sentences (see Josephs MS) and in topicalized sentences.[2] They are cited here to illustrate the conditions under which the VM surfaces.

5.4 VM as [o-]

As we observed in the previous chapter (note 2), a small and very irregular class of verbs seem to take the VM in yet another phonological shape, as a prefix o-. Most of these have base forms which also occur as nouns, and the verb forms are either transitive (although defective since they do not take the progressive affix) or intransitive. When o occurs in an unstressed syllable it can be traced to an underlying sequence of /wV/ by the rule of Glide plus Vowel Reduction (see 3.6). I assume that the VM is the source of this o since there are alternants of at least one base which takes o- containing m (the perfective form kmer of /keri/ 'ask'; see 5.6.2). The m has undergone the denasalization rule idiosyncratically, since there are no labials in the bases to be cited, and the resulting sequence wV- reduces to o. Some examples of such verbs whose base forms also occur as nouns are as follows:

/keri/ 'question', oker 'ask'

/reŋu/ 'heart, spirit', oreŋ 'appreciate'

/kwadi/ 'technique of fighting', okoad 'fight'

/klukl/ 'cough', oklukl 'to cough'

/ʔuri/ 'laughter', oʔərʔur 'laugh'

The last example involves reduplication of the base. A few verbs which take the o- form of the VM do not appear to be derived from nouns since their base forms cannot occur alone. Two examples are:

/kyu/ okiu 'go by way of'

/kor/ okor 'disobey'

The surface form o- of the VM in these verbs is homophonous with one of the causative affixes (see Chapter VI). The verbs presently under discussion have none of the properties of causative verbs, and the only one of those cited which has a perfective form, oker, forms it in the regular way for transitive verbs. I assume that the prefix o- here is a form of the VM rather than of the causative affix, despite its unusual phonological shape.

5.5 Ergative Sentences

A type of sentence in which the verb has to be marked only with the VM is the ergative sentence. The term 'ergative' as traditionally defined (for example Lyons 1968:352) refers to the case marking on nouns in transitive and related intransitive sentences. For example 22 is said to be ergative since the NP which is its subject is the object in 23, the related transitive sentence:

(22) The stone moved.

(23) The man moved the stone.

Starosta (1971:442) observes that with the theory of case grammar developed by Fillmore (1968) this phenomenon can be further clarified. Fillmore points out that the notion 'subject' involves merely surface phenomena. Noun phrases can be identified by their syntactic/semantic 'case' relationship to the verb in the deep structure. An ergative sentence is one in which the deep Object is the surface subject. It is distinct from passive sentences in that the verb is marked in the same way in intransitives and ergatives, and in that an Agent or Instrument NP in an ergative sentence will be marked in the same way (with the preposition er in Palauan). Starosta's explanation enables us to recognize certain Palauan sentences as ergative, in contrast to passive sentences, which are actually produced by the freely applying primary topicalization transformation (Fillmore 1968:57). Such topicalized sentences contain extra prefixation on the verb as well as pronominalization phenomena,[2] whereas ergative (and intransitive) sentences contain verbs marked only with the VM.

In an ergative sentence the verb is marked only with /mV-/ even though it occurs with more affixation in Agent-subject transitive sentences. The NP which is in the Object case is the subject and occurs before the verb. The Agent (or, more commonly, the Instrument) NP, if

present, occurs after the verb and is marked with the preposition er. This preposition does not mark Agent in either active or passive sentences. In the present tense, such sentences function mainly as warnings:

(24) a ŋikəl a məkaŋ
ŋikVl mV#kal
fish VM eat
'The fish is going to get eaten!'

(25) kid a məwes
kidV mV#wes
we (inc) VM see
'We can be seen!'

Although such sentences are not common, an example of an ergative sentence containing an Agent is the following:

(26) a ŋikəl a məka er a bilis
ŋikVl mV#kal bilis
fish VM eat dog
'The dog is going to eat the fish!'

We find that verbs which are normally transitive are interpreted as warnings when ergative or perfective (see 5.6.2). Only progressive verbs can be interpreted as true present tenses, as we would expect. The ergative verb is unmarked for aspect and only has the warning interpretation in the present tense.

In the past or future tense, ergatives can be used far more freely. The future is marked with mo, one of a

set of auxiliaries which I do not discuss (see Josephs MS). The following sentences are examples:

(27) a ŋikəl a mo məkaŋ
ŋikVl mV#bo mV#kal
fish future VM eat
'The fish will be eaten.'

(28) a blai a mo məsesəb er a ŋau
blay mV#bo mV#sesob ŋawi
house future VM burn fire
'The house will be burned by the fire.'

(29) a blai a milsesəb er a Droteo
blay m-il-V#sesob
VM burn (past)
'The house was burned by Droteo.'

Generally the VM surfaces as mə- in ergative sentences. When it affixes to bases beginning with b it undergoes some phonological changes. This class of bases is distinctive in other forms to be discussed in this chapter, by virtue of these same rules. The prefix /mV-/ first undergoes the denasalization rule, which applies only to this affix, changing m to w. This was discussed in 5.3. The initial b of the stem always conditions the application of the rule. When the m has changed to w the sequence of w plus the vowel of the VM reduces to o by Glide plus Vowel Reduction (see 3.6). Some sample derivations of ergative forms of b-initial bases are:

mV#boes 'shoot'	mV#buruʔ 'spear'	
wV#boes	wV#buruʔ	Denasalization of m
wVbóes	wVbúruʔ	Stress Assignment
	wVbúrəʔ	Reduction of Single Vowels
obóes	obúrəʔ	Glide plus Vowel Reduction

These present tense ergative forms are used in sentences such as the following:

(30) a ŋikəl a oburəʔ
ŋikVl mV#buruʔ
fish VM spear
'The fish is going to get speared!'

(31) a bəloʔəl a oboes
bVloʔl mV#boes
pigeon VM shoot
'The pigeon is going to get shot!'

When the past tense /-il-/ is added to these forms the resulting verb begins with ul-. A sample derivation is as follows:

m-il-V#boes	
w-il-V#boes	Denasalization of m
wilVbóes	Stress Assignment
ulVbóes	Glide plus Vowel Reduction
uləbóes	Reduction of Single Vowels

Here the sequence wi reduces to u by Glide plus Vowel

Reduction. Sentences containing such past tense ergative forms are as follows:

(32) a bəlo?əl a uləboes er ?elii
bVlo?l m-il-V#boes ?elii
pigeon VM shoot (past) yesterday
'The pigeon was shot yesterday.'

(33) a ŋikəl a uləburə? er a biskaŋ
ŋikVl m-il-V#buru? biskaŋ
fish VM spear (past) spear
'The fish was speared with a spear.'

Ergatives marked for past tense contrast with resultative stative forms (see 4.5.1) in that an Agent NP can be added to the former type of sentence, but not to the latter. For example, 34 and 35 both translate into English in the same way although they can be distinguished with more specification.

(34) a bəlo?əl a uləboes
bVlo?l m-il-V#boes
pigeon VM shoot (past)
'The pigeon was shot.' (There was an action of shooting it.)

(35) a bəlo?əl a mle bloes
bVlo?l mle b-l-oes
pigeon past shoot (resultative)
'The pigeon was shot.' (injured from being shot)

An Agent NP can be added to 34, but not to 35:

(36) a bəlo?əl a uləboes er a Droteo

'The pigeon was shot by Droteo.'

In 35 the verb is [+Stative] whereas in 34 and 36 it is [-Stative]. Another example of the same distinction is:

(37) a ŋikəl a milə?at

ŋikVl m-il-V#?atu

fish VM smoke (past)

'The fish was smoked.' (action)

(38) a ŋikəl a mle ?əlat

ŋikVl mle ?-l-atu

fish past smoke (resultative)

'The fish was smoked.' (state)

The verb in 37 is [-Stative] since an Agent NP can be added:

(39) a ŋikəl a milə?at er a Droteo

'The fish was smoked by Droteo.'

No Agent NP can be added to 38; an Instrument can be added to such sentences, however:

(40) a bəlo?əl a mle bloes er a twenty-two

'The pigeon was shot with a twenty-two.'

(41) a ŋikəl a mle ?əlat er a orrəŋəlek

wVrraŋl#ekV

smokehouse-my

'The fish was smoked in (with) my smokehouse.'

Sentence 41 is distinct from the corresponding ergative form with an Instrument NP:

(42) a ŋikəl a milə?at er a orrəŋəlek

'The fish was smoked in (with) my smokehouse.'

Sentence 41 can only be used if the fish is still on the smokehouse, whereas there is no such restriction on the use of 42. This is a consistent function of the distinction between ergative and resultative stative forms.

The ergative sentence is the least marked of the transitive sentences in Palauan. Of all the types of transitive sentences, ergatives are those which contain the lease morphologically complex verbs. Furthermore, verbs in such sentences are marked the same way as verbs in intransitive sentences, with the VM as the only obligatory affixation and the past tense infix also possible. Ergatives cannot be marked for aspect (progressive or perfective). All other transitive constructions, with the exception of those which certain stative verbs permit (see Chapter IV), are obligatorily marked for aspect.

The verb bases in ergative sentences must be transitive; with the discussion of ergative sentences it is now appropriate to consider some properties of transitive bases. Some are marked only [+V] in the lexicon since they occur only as verbs. A great many also have base forms which occur as nouns, as we have already seen for a number of other verb bases. These will be marked [+N, +V] in the lexicon. Some examples of transitive bases which can also occur as nouns, together with their ergative

forms, are the following:

/bayul/ bail 'clothing', obail 'clothe'

/boes/ boes 'gun', oboes 'shoot'

/wes/ wes 'look', məwes 'see'

/duba/ dub 'poisonous plant', mədub 'poison'

/ʔatu/ ʔat 'smoke', məʔat 'to smoke'

/diki/ dik 'wedge', mədik 'to wedge'

I have so far discussed sentences in which the verb is marked only with the verb marker and optionally with the past tense marker. Such sentences include intransitives and ergatives, in addition to the stative forms discussed in Chapter IV. We now proceed to the discussion of additional affixes which can occur with /mV-/.

5.6 Sentences with Agent Subjects

Sentences with Agent subjects are an important class. They are normally transitive, although the Object need not be stated in some cases, for example:

(43) a Droteo a məŋaŋ

mV#ŋ #kal

VM progressive eat

'Droteo is eating.'

(44) a Droteo a omoes

mV#m #boes

VM progressive shoot

'Droteo is shooting.'

Verbs in these sentences must be marked either for prog-

ressive or perfective aspect. In addition either /-u/, the predictive marker, or /-a/, the inchoative marker, are possible. The affixes /-u/ and /-a/ affix to both stative and non-stative, transitive or intransitive bases, but the progressive and perfective affixes attach only to transitive non-stative bases. The remainder of this chapter deals with the above-mentioned affixes.

5.6.1 Progressive. The following are some progressive sentences. The object NP is marked with either er a or with only a; the presence of er determines that the object is specific.

(45) a Droteo a məŋa a ŋikəl
mV#ŋ #kal ŋikVl
VM prog eat fish
'Droteo is eating fish.'

(46) a Droteo a omoes a bəloʔəl
mV#m #boes bVloʔl
VM prog shoot pigeon
'Droteo is shooting pigeons.'

(47) a Droteo a məŋiis er a kliokl
mV#ŋ #kiys klyokl
VM prog dig hole
'Droteo is digging the hole.'

(48) a Droteo a məlatəʔ er a mlai
mV#l #ŋataʔ mlay
VM prog clean canoe
'Droteo is cleaning the canoe.'

The progressive affix is not easy to recognize, as the above examples illustrate. This affix alternates in highly irregualr ways which can only be analyzed as suppletion. Suppletion involves alternations of a lexical item which, though they may depend on phonological environment, cannot be predicted by phonological rules.

The progressive affix surfaces as l when the initial consonant of the base is apical--t, d, s and l, or when the initial consonant of the base is ŋ. It surfaces as ŋ when the initial consonant of the base is k or ʔ, and as m when the initial consonant of the base is b or w. I do not have any examples of active verb bases beginning in vowels or y.[3] We can make sense out of these alternations, at least historically, by examining similar phenomena in related languages.[4] I hypothesize that the underlying form for this affix was once /n-/, surfacing as n before vowels (since it cannot undergo assimilation to the following consonant in this environment). The irregularities have then arisen since the sound change of n to l. Due to the historical rule of ŋ epenthesis (see 2.7), the bases which are now ŋ-initial were once vowel-initial. This explains the alternation between ŋ of

ŋ-inital bases and the l form of the progressive affix which occurs on ŋ-initial bases: these bases were once vowel-initial, requiring that the underlying form of the prefix (once n, changing to l) surface with these forms. For example, the base /ŋasu/ 'extract' has an ergative form məŋas, but a progressive form məlas. This alternation can be explained historically, but no synchronic phonological rule changing ŋ to l can be motivated. Hence such alternations are due to suppletion.

The alternants ŋ and m show that this was originally an affix which underwent nasal assimilation, in the same way as the active prefix in Indonesian (see note 4). However, the change of n to l altered the surface form in those positions where n originally occurred. If we wished to claim that the underlying form of the affix changed (because of the sound change) from /n-/ to /l-/, then we would have to account for the presently occurring alternants by means of independently required phonological rules. Vowel-initial bases would have to be posited (for example, /asu/ 'extract'), and the ŋ-epenthesis rule would have to apply to give such forms as məŋas. The underlying form /l/ would then surface before vowel-initial bases, as well as on those bases beginning with apical consonants, for example məlesəb, from /sesob/ 'burn'. However, /l/ would somehow have to be converted to n in order that it could undergo nasal assimilation,

to derive the surface forms m and ŋ. This could not be motivated anywhere else in the phonology. I conclude that the progressive affix does not have one underlying form which undergoes regular phonological rules in order to surface in a variety of shapes. The rules of ŋ epenthesis and nasal assimilation would have to be extended substantially in order to operate on this affix to give the correct output, and a l to n rule would have to be introduced. This would be introducing undue complexity into the grammar. Clearly we have a case of suppletion here, where we can state what alternants occur according to their phonological environment. In structuralist terms, these are 'phonologically conditioned allomorphs'. No phonological rule, independently required for the language, is involved, however.

The progressive affix is placed after the VM or /wV-/, in the case of causative verbs which allow the progressive affix (see Chapter VI), and before the base. The initial consonant of the base determines which alternant of the affix occurs. The initial consonant then deletes. This deletion is still a regular rule, although it has a particular morphological environment. It is a regular rule since it affects a large number of lexical items (all the transitive bases), in contrast to the case of the alternations of the progressive affix, which involve just one lexical item. This deletion does not generally

occur when the progressive follows the causative affix /wV-/, as we shall see in Chapter VI. Some sample derivations of non-causative verbs follow. The progressive affix is cited in the appropriate alternation since it does not, strictly speaking, have an underlying form.

mV#ŋ#kiys 'dig'	mV#l#ŋata? 'clean'	
mV#ŋiys	mV#lata?	Consonant Deletion
mVŋíys	mVlá́ta?	Stress Assignment
məŋíys	məlá́tə?	Reduction of Single Vowels

When the base begins in r the progressive affix has the alternant r; we have seen l assimilating to a following r elsewhere in Palauan, so it is reasonable to posit the alternant /l-/ in these cases.

mV#l#ruwol 'make'	
mV#rruwol	Assimilation of l
mV#ruwol	Consonant Deletion
mVrúwol	Stress Assignment
mVrúwl	Vowel Deletion
məruwl	Reduction of Single Vowels

As in the case of ergative verbs, bases which begin with b or w require the VM to go through the denasalization rule and the resulting sequence of wV is then reduced to o. Derivations of progressive forms for such verbs are as follows:

mV#m#boes 'shoot'	mV#m#buruʔ 'spear'	
wV#m#boes	wV#m#buruʔ	Denasalization of m
wV#moes	wV#muruʔ	Consonant Deletion
wVmóes	wVmúruʔ	Stress Assignment
	wVmúrəʔ	Reduction of Single Vowels
omóes	omúrəʔ	Glide plus Vowel Reduction

These progressive forms can be compared with the ergative forms obóes and obúrəʔ. An example of the progressive form of a w-initial base is omak, from /waku/ 'anchor'.

The past tense infix is placed after the m of the VM and before the progressive affix, as in the following examples:

/kiys/ 'dig', milənjiis 'was digging'

/ŋataʔ/ 'clean', milənjatəʔ 'was cleaning'

/sesob/ 'burn', millesəb 'was burning'

/boes/ 'shoot', uləmoes 'was shooting'

As for the past tense ergative forms, past progressive forms of b-initial bases begin with ulə-, for example uləmoes 'was shooting'.

There are a few verbs which idiosyncratically do not have the progressive affix, or the surface. In such cases the verb form is identical in progressive and ergative sentences. They are distinguished only by order and the presence or absence of er.

(49) a Toki a məsiləkˀ a bilek
mV#l #silokˀ bayul#ekV
VM prog wash clothes-my
'Toki is washing my clothes.'

(50) a Toki a mo məsiləkˀ a bilek
'Toki is going to wash my clothes.'

(51) a bilek a mo məsiləkˀ er a Toki
'Toki is going to wash my clothes.'

(52) a Droteo a milsauˀ er a buuˀ
m-il-V#l #sawe? buuˀ
VM (past) prog pick betel nut
'Droteo picked the betel nut.'

(53) a buuˀ a milsauˀ er a Droteo
'Droteo picked the betel nut.'

Sentences 49, 50 and 52 have Agent subjects; their verbs contain an underlying progressive affix which has been idiosyncratically deleted. Sentences 51 and 53 are ergative; their verbs are marked with /mV-/ and do not contain the progressive affix in their underlying structure. I know of only a few verbs which do not contain the progressive marker when we would expect it; they all begin with s. However, no generalization can be made on the basis of just a few forms.

Bases which are l-initial are also identical in their progressive and ergative forms: /luˀus/ 'write' is məluˀəs when both ergative and progressive. This is because the

alternant l- of the progressive affix is used since the initial consonant of the base, l, is apical. The initial consonant deletes, giving the same surface form as for the ergative, where only the VM is added to the base.

A few stative bases can occur with the progressive affix; the verb then allows an Agent or Instrument subject, and the resulting meaning is similar to that of causative verbs. Compare the following pairs of sentences:

(54) a ralm a məkeald
ralm mV#kyald
water VM hot
'The water is hot.'

(55) a Toki a məŋeald er a ralm
mV#ŋ #kyald ralm
VM prog hot water
'Toki is heating the water.'

(56) a Droteo a məʔəsaŋ er a sensei
mV#ʔsaŋ seŋsei
VM busy teacher
'Droteo is busy because of the teacher; Droteo is being occupied by the teacher.'

(57) a sensei a məŋəsaŋ er a Droteo
seŋsei mV#ŋ #ʔsaŋ
teacher VM prog busy
'The teacher is occupying Droteo.'

(58) a o?ik a məkekad er a udəl
wa?i#kV mV#kekad wudl
leg-my VM itch grass
'My leg is itching because of the grass.'

(59) a udəl a məŋekad a o?ik
wudl mV#ŋ #kekad wa?i#kV
grass VM prog itch leg-my
'The grass is itching my leg.'

These verbs will be marked as both [+Stative] and [-Stative]. When they are [-Stative], they are transitive, with all the normal transitive possibilities for affixation. Sentences 53 and 55 contain a Cause or Instrument NP (see Chapter IV).

5.6.2 Perfective. If a transitive verb is marked for perfective (or completive) rather than progressive, the affixation is somewhat different. There is a special set of pronominal suffixes which agree in person and number with the Object of the sentence. If no Object NP is stated, the suffix can stand alone as the specification of the Object. The set is exemplified for the verb /boes/ 'shoot, whose perfective forms are given below:

mosak 'shoot me'
mosau 'shoot you (sing)'
mosiy 'shoot him/her/it'
mosid 'shoot us (inc)'
mosəmam 'shoot us (exc)'

mosəmiu 'shoot you (plu)'

mostərir 'shoot them (human)'

The form with no suffix at all is used exclusively for non-singular, non-human Objects: moes. Perfective marking on the verb is interpreted as referring to action which has been completed. The use of the suffixes which give the person and number of the Object entail that it is specific, so that no a/er a distinction can be made in sentences with perfective verbs. The unmarked and third person forms are the most common in transitive sentences with a fully specified Object. The perfective forms can only be interpreted as warnings in the present tense, in the same way as the present tense ergatives are interpreted.

(60) a Droteo a mosiy a bəloʔəl

mV#boes#iyV bVloʔl

VM shoot perf pigeon

'Droteo is going to shoot the pigeon!'

Perfective forms are more commonly used in the past and future tense:

(61) a Droteo a milosiy a bəloʔəl

m-il-V#boes#iyV

VM (past) shoot perf

'Droteo shot the pigeon.'

(62) a Droteo a miloes a bəloʔəl

m-il-V#boes#Ø

VM (past) shoot perf

'Droteo shot the pigeons.'

(63) a Droteo a milostərir a rəʔad

m-il-V#boes#tVrirV rV #ʔadi

VM (past) shoot perf plural person

'Droteo shot the people.'

The prefix /rV-/ in 63 is used on human nouns to mark plural; plurality is unmarked on other nouns. These verb forms contrast with the form uləmoes, past progressive, which translates as 'was shooting', focusing on the activity of shooting while it was in progress rather than on the achievement of having shot something.

The morphological breakdown given for 60-63 shows the underlying forms to be very different from the surface forms. This is due to some rather complex phonological processes. The VM in all of these forms is metathesized in the same way as for the intransitive verbs already discussed. As in those cases, the VM must delete if there is another prefix or infix on the base. The only possible other infix is /-il-/, the past tense marker, which contains an unstressed high vowel. As we shall see, the VM never surfaces before an unstressed high vowel. Some underlying and surface forms which illustrate this are given below. Each contains the Ø perfective marker, for

non-human plural Object. In the present tense the metathesized VM occurs whereas in the past tense it does not.

Surface Form	Underlying Form
kma	/mV#kal#Ø/ 'eat them'
kila	/m-il-V#kal#Ø/ 'ate them'
smuub	/mV#suwob#Ø/ 'study them'
siluub	/m-il-V#suwob#Ø/ 'studied them'

I cite the forms without suffixes here since further complications arise when a form has a suffix to which stress is assigned. Examples of deleted VM when another prefix is present can again be given from the pronominal prefixes used in conditional clauses:

Surface Form	Underlying Form
ləsuub	/lV#mV#suwob#Ø/
ləka	/lV#mV#kal#Ø/
ləsiluub	/lV#mV#s-il-uwob#Ø/

The last example contains the past tense infix. In almost all these cases it is misleading to write a linear string of morphemes as the underlying form of the verb, since I am assuming that what actually happens in the derivation of a form is an ordered series of lexical insertions, raising transformations and deletions. The infix /-il-/ is normally placed after the m of the VM, but this is not exactly what happens when the form requires metathesis or deletion of the VM. For example, ləsiluub contains the infix after the initial consonant of the base, and obviously

it cannot be inserted until after the VM has deleted. An example of this particular verb in a conditional clause is the following:

(64) a Droteo a ləsiluub a subəlel ...
lV#mV#s-il-uwob#Ø suwob#Vl#elV
VM study (past) perf lesson-his
'If Droteo had studied his lessons ...'

Bases beginning with /b/ behave slightly differently with respect to this morphological constraint. The m of the verb marker surfaces when there is another infix, but not when there is another prefix. When the VM metathesizes, a sequence bm is produced and this reduces to m by a late phonological rule which operates initially only. The following derivations illustrate why the VM surfaces when there is another infix, but not when there is a prefix. The verb base is /boes/ 'shoot'.

mV#b-il-oes#Ø	lV#mV#boes#Ø	
mbiloes		Vowel Deletion
bmiloes		Metathesis
	lVboes	VM Deletion
bmilóes	lVbóes	Stress Assignment
	ləbóes	Reduction of Single Vowels
milóes		Cluster Simplification

That the VM surfaces in some phonologically conditioned instances supports the hypothesis that it is in the underlying structure of forms where it does not surface. I

cannot, however, explain why it should delete in the other environments. Nor can I explain at what point in the derivation the deletion takes place, although I am assuming that it is at an early stage since none of the regular phonological rules seem to be responsible. Other alternations of b-initial bases in this morphological environment are:

/bayul/ 'clothe', mail, ləbail

/btar/ 'swing', mtar, ləbtar

/briid/ 'scatter', mriid, ləbriid

We have already seen in the discussion of intransitive bases that the metathesized VM undergoes a denasalization rule, so that m becomes w when there is an m or b in the base. Some examples of transitive bases in the perfective third person plural non-human form, where this rule applies, follow. The w obligatorily syllabifies to u.

/sesob/ 'burn', sués əb

/ŋim/ 'drink', ŋuím

/daŋob/ 'cover', duáŋəb

/tibi/ 'organize', tuíb

Compare the above with the perfective non-suffixed forms of bases which do not contain labials, and where this rule does not apply:

/ʔatu/ 'smoke', ʔəmat

/ŋasu/ 'extract', ŋmas

/diki/ 'put down', dmik

The perfective form kmer of /ker/ 'ask' should be mentioned here, since it shows that the oker form referred to earlier does indeed contain the VM, metathesized in the perfective. So far, we have been discussing those perfective forms which contain no suffix--that is, the third person plural non-human forms. All other perfective forms take the appropriate suffix, agreeing in person and number with the object. These suffixes always take stress; we must now examine how the base with metathesized VM reduces when stress is assigned to the suffix. We have already seen how the high vowel of the past tense infix causes deletion of the VM when it has metathesized. This process can be motivated by examining the behaviour of unstressed high vowels in bases when immediately preceded by the metathesized VM. The VM always deletes when followed by an unstressed high vowel. Compare the suffixed and non-suffixed perfective forms of the following bases; the third person singular suffix surfaces as -iy in these forms.

/ʔuyw/ 'read', ʔəmúiw, ʔuiwíy

/luʔus/ 'write', ləmúʔəs, luʔəsíy

/kimud/ 'cut', kuímd, kimdíy

/kiys/ 'dig', kmiis, kiisíy

/silok/ 'wash', smílək, siləkíy

/ŋim/ 'drink', ŋuím, ŋilmíy

The singular perfective form of /ŋim/ 'drink' brings the l found in iluməl, anticipative stative, to the surface.

It does not occur elsewhere, hence my positing of /ŋim/ as the underlying form (see 4.5.2).

If the vowel is not high, it appears that the metathesized VM must obligatorily undergo the denasalization rule, and the resulting w plus the following (non-high) vowel undergo Glide plus Vowel Reduction, producing surface o. Because of the penultimate stress assignment, such alternations occur only on bases of less than three syllables; this covers the majority of bases. Examples of the alternations are:

/sesob/ 'burn', sué́səb, sosəbí́y

/daŋob/ 'cover', duáŋəb, doŋəbí́y

/kemod/ 'mend', kué́md, komdí́y

/ʔatu/ 'smoke', ʔəmá́t, ʔotú́r

/ŋasu/ 'extract', ŋmá́s, ŋosú́r

The shape -ur of the suffix in the last two examples will be accounted for shortly. The following is a derivation of sosəbí́y 'burn' (perfective third person singular):

mV#sesob#iyV	
m#sesob#iyV	Vowel Deletion
smesob#iyV	Metathesis
swesob#iyV	Denasalization of m
swesobíyV	Stress Assignment
swesobíy	Vowel Deletion
swesəbíy	Reduction of Single Vowels
sosəbíy	Glide plus Vowel Reduction

Pätzold (1968:69) recognizes the relatedness of 'infixed' m, u and o, but he gives no account of their function and does not analyze the phonological processes involved.

The third person singular perfective suffix surfaces in a variety of ways. When the base is consonant-final the surface form of the suffix is -iy, but when the base ends in a vowel the suffix is either -ir, -ar or -ur. Carlson (MS f) points out that there is a conditioned sound change in the history of Palauan which caused PAN *y to become Palauan r after a, but remain as y elsewhere. PAN *layay 'sail' becomes Palauan /yars/, whereas *niyur 'coconut' becomes Palauan /lyus/. In the case of the third person singular suffix, reconstructed *-iya, Carlson posits metathesis of the y and the a in order to provide the appropriate environment for the rule changing y to r. Whatever the historical facts were, the positing of metathesis here as a synchronic rule is unnecessary; we need only state that there are two allomorphs of the affix in the lexicon: /-iyV/, which occurs following consonant-final bases and /-rV/, which occurs following vowel-final bases. The final vowels are necessary in order for the stress assignment to be correct. Again we have a case of suppletion of an affix resulting from a historical sound change. Some examples of the /-rV/ form of the affix are found on the following verbs:

/ʔatu/ 'smoke', ʔotur

/ɗuba/ 'poison', ɗubar

/leŋi/ 'borrow', loŋir

A sample derivation is as follows:

mV#ʔatu#rV 'smoke it'	
m#ʔatu#rV	Vowel Deletion
ʔmatu#rV	Metathesis
ʔwatu#rV	Denasalization of m
ʔwatúrV	Stress Assignment
ʔwatúr	Vowel Deletion
ʔotúr	Glide plus Vowel Reduction

Forms with the /-rV/ perfective suffix bring underlying final vowels to the surface in the same way as the anticipative stative suffix /-Vl/ and the possessive suffix /-kV/, by virtue of the stress dynamics of the language.

5.7 Predictive and Inchoative

We now proceed to the examination of two somewhat problematic affixes, /-u/ and /-a/. They can occur on intransitive and stative bases as well as on transitive bases. I do not claim that the following discussion is a complete analysis of the functions of these affixes. The syntactic and semantic constraints on the occurrence and interpretation of them are very complicated and partially irregular; I aim only to give an introductory sketch here. I gloss /-u/ as 'predictive' and /-a/ as 'inchoative' (involving a change of state or new action). Some

examples on intransitive verbs are as follows:

(65) a Droteo a rurtuŋ
mV#rurt#u
VM run predictive
'Droteo is about to run.'

(66) a Droteo a rurtaŋ
mV#rurt#a
VM run inchoative
'Droteo is starting to run.'

(67) a skoki a sobekuŋ
skoki mV#sebk#u
airplane VM fly predictive
'The airplane is about to fly (about to take off).'

(68) a skoki a sobekaŋ
skoki mV#sebk#a
airplane VM fly inchoative
'The airplane is starting to fly (taking off).'

Sentences 65 and 67 state the speaker's prediction of what is going to happen in the immediate future whereas 66 and 68 state that a new action is beginning. The latter sentences do not necessarily involve the speaker's prediction that the new action would obtain. The exact function of /-a/ is difficult to determine; sometimes there seems to be a belief that the event would occur, and in other cases a necessary condition of using the affix is that there was a period of waiting before the

new action obtained.

These affixes have some identical properties. A verb containing them must also be marked with the VM; when it metathesizes the syllable containing the VM is unstressed, so that the types of reduction we have already encountered occur. An epenthetic ŋ always occurs after /-u/ and /-a/ when they are final in a sentence. This is expected for /-a/ since it consists of a low vowel (see 2.7), but for /-u/ this is an idiosyncratic property which will have to be entered in the lexicon. These suffixes attract stress, yet they are not the penultimate vowel in a word. I have posited underlying vowels at the end of a form which has ultimate stress; for example, since the third person singular perfective suffix usually surfaces as -iy (phonetic [i:]), I posit an underlying form /-iyV/ in order that the stress be penultimate. In this case, however, the vowels are phonetically short; I cannot posit an underlying final vowel since it would not delete or reduce, being adjacent to a stressed vowel (see 3.3). I conclude that these affixes are exceptions to the stress rule; their lexical entries will have to record that they attract stress: /-ú/ and /-á/. It might also be possible to posit underlying /-uŋV/ and /-aŋV/, but then the deletion of the ŋ sentence-medially would have to be accounted for. The derivation for sobəkaŋ 'starting to fly' is as follows:

mV#sebk#á́

m#sebk#á́ Vowel Deletion

smebk#á́ Metathesis

swebk#á́ Denasalization of m

sobká́ Reduction of Glide plus Vowel

sobəká́ Schwa Epenthesis

sobəká́ŋ ŋ Epenthesis

Some further examples of intransitive bases with their predictive and inchoative forms are the following:

/rebt/ 'fall', robətú́, robətá́

/tobd/ 'go out', tobədú́, tobədá́

/laŋl/ 'cry', loŋəlú́, loŋəlá́

Stative verbs can take /-á́/ to indicate that a change of state is in progress:

(69) a Droteo a soŋərəŋəraŋ

mV̄#sVreŋVr#a

VM hungry inchoative

'Droteo is getting hungry.'

(70) a bteluk a mərəŋəlaŋ

bVdulu#kV mV#riŋl#a

head-my VM hurt inchoative

'My head is starting to ache.'

Some stative and intransitive verbs take -o or -ei instead of -a; I have no explanation of this. Some examples are:

/dʔor/ 'stand', dəʔərɔ́

/mad/ 'die', mədéi

/ʔed/ 'shallow', məʔedéi

There are some odd morphological constraints on when /-ú/ can be affixed to a base. Stative and some intransitive bases can never take /-ú/; neither can any perfective, causative or reciprocal forms. In all these cases the separate word /ku/ (surfacing as kuŋ sentence-finally) must occur. A new state is predicted when this is used with a stative base:

(71) a bt̪əluk a məriŋəl kuŋ
bVdulu#kV mV#riŋl ku
head-my VM hurt predictive
'My head is about to hurt; I am going to get a headache.'

Some transitive bases also must take /ku/ rather than the suffix; an example is /ʔuyw/ 'read'.

(72) a Droteo a məŋuiw ku er a hoŋ
mV#ŋ ʔuyw ku hoŋ
VM prog read predictive book
'Droteo is about to read the book.'

Normally, however, transitive bases can take the affix; both /-ú/ and /-á/ can only occur on ergative and progressive forms of transitive bases. Examples of ergative forms are the following:

(73) a bəlo?əl a obosu er a Droteo
bVlo?l mV#boes#u
pigeon VM shoot predictive
'The pigeon is about to be shot by Droteo.'

(74) a bəlo?əl a obosa er a Droteo
bVlo?l mV#boes#a
pigeon VM shoot inchoative
'The pigeon is shot (new action) by Droteo.'

With the progressive form of the verb /-á/ has the interpretation 'have started_____'. Compare the following pair of sentences:

(75) a ŋalək a mələk<u>i</u>ŋu er a dəmal
ŋalVk mV#l #tVkoy #u dVma#lV
VM prog speak predictive father-his
'The child is about to talk to his father.'

(76) a ŋalək a mələk<u>i</u>ŋa er a dəmal
mV#l #tVkoy #a dVma#lV
VM prog speak inchoative father-his
'The child has started talking to his father.'

The base /tVkoy/ 'talk, speak' requires an <u>ŋ</u> before the affix can be added.

Although /-ú/ and /-á/ do not strictly belong in this chapter since they may affix to stative as well as non-stative bases, a brief discussion of them is included here since a fuller treatment would involve an investigation of speakers' presuppositions concerning their use

with different bases and in different situations, and this is beyond the scope of this work.

FOOTNOTES TO CHAPTER V

[1]I assume this phenomenon is related to the infix -um- in Philippine languages, which is posited by McGinn (personal communication) to be an underlying prefix /mu-/ which metathesizes. It normally functions as an 'agent focus' marker, but also occurs on some intransitive bases as purely a verb marker, similar to the Palauan pattern, for example:

Chamorro: /gupu/ 'fly', gumupu
/tohge/ 'stand up', tumohge

Tagalog: /kulu?/ 'boil', kumulo?
/bagyu/ 'storm', bumagyu

[2]Primary topicalization is a syntactic process beyond the scope of this dissertation, but I include a brief description here in order to clarify the distinction between ergative and 'passive' in Palauan. According to Fillmore's definition (1968:57) 'primary topicalization' or 'subjectivization' involves making an NP (including those which are the normal subject choice) the subject of a sentence. In Palauan, this process is a great deal less restricted than it is in English, for example, where normally only the Object can be topicalized, aside from the normal subject choices, thus forming passive sentences. When a Palauan sentence undergoes primary topicalization, resulting in a non-normal subject selection, three changes occur:

(a) The topicalized NP is moved to the front of the sentence, the subject position, and the normal subject (usually the Agent) is moved to the end of the sentence.

(b) The original position of the topicalized NP is filled with a pronoun preceded by er; it is ŋiy when the topicalized NP is singular, tir when it is human and plural, and no pronoun is marked when the topicalized NP is plural and non-human.

(c) The verb is marked with one of the set of pronominal prefixes mentioned earlier as occurring in conditional clauses; the prefix must agree in person and number with normal subject of the sentence.

Only ergative sentences cannot undergo this process. Otherwise, almost any non-subject NP can be subjectivized by this transformation. Some examples of sentences with normal subject selection and topicalized versions of them are now given.

(1) a Droteo a mo er a stoaŋ
mV#bo stoaŋ
VM go store
'Droteo is going to the store.'

(2) a stoaŋ a ləbo er ŋiy a Droteo
lV#mV#bo
literally: 'The store is being gone to by Droteo.'

(3) a Droteo a mədakt a dərumk
mV#dakt dVrumk
VM fear thunder
'Droteo is afraid of thunder.'

(4) a dərumk a ləmədakt er ŋiy a Droteo
lV#mV#dakt
'Thunder frightens Droteo.'

In the progressive, the pronominal prefixes cause reduction of the VM, similarly to the alternations of the b-initial bases, where a mV sequence reduces to o.

(5) a Droteo a məŋiis er a kliokl
mV#ŋ #kiys klyokl
VM prog dig hole
'Droteo is digging the hole.'

(6) a kliokl a loŋiis er ŋiy a Droteo
lV#mV#ŋ#kiys
'The hole is being dug by Droteo.'

All the examples so far have the er ŋiy pronominalization and have third person subjects in the normal subject selection. Some sentences which do not are the following:

(7) ak omoes a bəloʔəl
ŋak mV#m #boes bVloʔl
I VM prog shoot pigeon
'I am shooting pigeons.'

(8) a bəloʔəl a kumoes

ku#mV#m#boes

'The pigeon is being shot by me.'

(9) a Droteo a omoes er a rəʔad

mV#m #boes rV#ʔadi

VM prog shoot plural person

'Droteo is shooting the people.'

(10) a rəʔad a lomoes er tir a Droteo

lV#mV#m#boes

'The people are being shot by Droteo.'

If the verb is in the perfective form no pronominalization takes place since the verb is already marked for the person and number of the Object and marks the distinction between human and non-human plural Object (see 5.6.2); such pronominalization would be redundant. Some examples of perfective sentences are the following:

(11) a Droteo a milosiy a bəloʔəl

m-il-V#boes#iyV bVloʔl

VM (past) shoot perf pigeon

'Droteo shot the pigeon.'

(12) a bəloʔəl a ləbilosiy a Droteo

lV#mV#b-il-oes#iyV

'The pigeon was shot by Droteo.'

A locative NP in a transitive sentence can also be topicalized:

(13) a Droteo a milosiy a bəloʔəl er a
m-il-V#boes#iyV bVloʔl
VM (past) shoot perf

ked
ked
hill
'Droteo shot the pigeon on the hill.'

(14) a ked a ləbilosiy a bəloʔəl er ŋiy
lV#mV#b-il-oes#iyV
a Droteo
literally: 'The hill was shot the pigeon on by Droteo.'

[3]The only possible example of a transitive verb base beginning with y is /yidok/ 'dirt' (see 6.3.2). The anticipative stative form means 'dirty'; this is an unpredictable meaning. In combination with the VM and what I assume to be the progressive affix, the anticipative stative form occurs as məŋidokl 'make dirty'. Further examples will be required to confirm the hypothesis that the ŋ here is the progressive affix.

[4]For example, in Indonesian and Javanese there is a prefix which occurs on active verbs. It assimilates to the point of articulation of the initial consonant of the stem; if that consonant is voiceless, it then deletes. In Indonesian this prefix, /ŋ-/, is always preceded by

me-, which could be related to the Palauan verb marker. Some example alternations from Indonesian follow:

/pilih/ 'choose', məmilih

/bakar/ 'burn', məmbakar

/tərima/ 'receive', mənərima

/darat/ 'land', məndarat

The phenomena of nasal accretion and nasal substitution have long been recognized in the verbal system of the languages of the Philippines and Indonesia (Dempwolff 1934:30-33).

VI. CAUSATIVES

6.0 Introduction

This chapter is concerned with the causative affixes /wV-/ and /bVk-/, which may attach to various kinds of bases. In 6.1 I discuss the phonological form of verbs marked with either causative affix and whichever of the other affixes already discussed are necessary. The various patterns of derivation of causative verbs from bases are presented in 6.3. Some examples of the way /wV-/ and /bVk-/ can contrast on a base are given in 6.4.

6.1 /wV-/ and /bVk-/

The usual surface form of /wV-/ is o-, because of the very productive rule of Glide plus Vowel Reduction (see 3.6). The only environment which causes /wV-/ to surface as wa- is reciprocal verbs (see Chapter VII); here the added prefix /kai-/ causes a change in the syllabification of the word: /kai#wV#toir/ 'chase each other' becomes kaiwatoir.

The affix /wV-/ does not require the VM to also be present on a base whereas /bVk-/ does. Generally a base will take either /wV-/ or /bVk-/, but some can take both separately, and both occur together on some progressive forms, as we shall see. With some exceptional properties, the causative verb can take the affixes discussed in Chapters IV and V. A list of most of these affixes on the base /tawt/ 'aim' is found below, with some subsequent

discussion of irregular forms. This base is one which can take both causative affixes; the meaning differences will be discussed later.

	wV-	bVk-
ergative	motaut	muktaut, obəktaut
progressive	oltaut	omətaut
perfective (-Ø)	otaut	məktaut
perfective (-iyV)	otutiy	məktutiy
resultative	ultaut	ulətaut
anticipative	otutali	oktutall

The ergative form with /wV-/ surfaces with the verb marker /mV-/, as expected, by the following derivation:

mV#wV#tawt
m#wV#tawt Vowel Deletion
mwV́táwt Stress Assignment
motáwt Glide plus Vowel Reduction
motáut Sonorant Syllabification

For the /bVk-/ derivation, two ergative forms are possible, with muk- and obək-. The two forms have the same morphological components, but are differently derived phonologically. The differences arise because of a rule that applies only to causative verbs: the b becomes w. This is similar to the denasalization of m rule which applies only to the verb marker. I know of no other lexical items besides

/bVk-/ and b-initial bases when preceded by the affix /wV-/ to which it applies. Since the rule applies to /bVk-/ optionally, at least when it is attached to some bases, it may be an innovation in the language. It applies consistently only to the stative forms (to be discussed shortly), and may apply to the ergative form. I do not know any specific constraints on its application. The two derivations for the different ergative forms follow. The VM undergoes either the idiosyncratic rule of Vowel Deletion or of Denasalization of m.

mV#bVk-	mV#bVk-	
mV#wVk-		b to w (optional)
m#wk-		Vowel Deletion
	wV#bVk-	Denasalization of m
	wVbək-	Reduction of Single Vowels
	obək-	Glide plus Vowel Reduction
muk-		Sonorant Syllabification

The reduction of /mV#bVk-/ to muk- rather than mok- is due to the deletion of the vowels and subsequent syllabification of the w arising from the b. It could also be possible that the underlying vowel in /bVk-/ is high, so that the resulting sequence of wV reduces to u by the rule of Glide plus Vowel Reduction. The obək- form of the ergative is what we expect for b-initial bases: the VM surfaces as o before b (see 5.5). I do not know if one ergative form is more acceptable to speakers from

different age groups.

The progressive form of the /wV-/ verb has the progressive affix /l-/, one of the alternants discussed in 5.6.1. In this environment the progressive affix does not cause the deletion of the t, the initial consonant of the base, as we would expect. The affix has further idiosyncratic properties in this environment: it only has two allomorphs, l- and m-. The form m- occurs when the base begins with b, and the b then deletes: omsau, from /bsaw/ 'bend'. The surface form om- of the affix /wV-/ plus /m-/ (progressive) is homophonous with the progressive form of normal transitive bases which are b-initial, for example, omail, from /bayul/ 'clothe', underlying /mV#m#bayul/. The homophony is due to the denasalization of the m of the VM, which results in w. The two forms of om- can, however, be distinguished in their ergative forms. The forms of om- which come from /mV#m-/ always have ergatives with an ob- initial sequence, for example, obail, underlying /mV#bayul/ (see 5.5), whereas those from /wV#m-/ can also have an ergative form beginning with mu-, and in some cases this is the only possible form. The sequence mu- arises through the rule changing b to w, in the same way as muk- is derived. For the base /bsaw/ 'bend', both obsau and musau are possible ergative forms, showing that the verb is marked with the causative affix /wV-/ rather than being a regular transitive verb.

The progressive form of verbs containing /bVk-/ is also irregular; it is formed by adding the other causative affix, namely /wV-/, to the base which is already marked with /bVk-/ and the VM, producing surface <u>omək-</u>. The derivation is as follows:

wV#mV#bVk-	
wV#m#bVk-	Vowel Deletion
wVmbək-	Reduction of Single Vowels
ombək-	Glide plus Vowel Reduction
omək-	Cluster Simplification

I cannot explain why the two causative affixes together should be used in progressive forms.

The perfective causative forms are regular: /wV-/ plus the appropriate perfective suffix are affixed to the base for the /wV-/ verb, giving <u>otaut</u>, perfective third person plural non-human, and <u>otutiy</u>, third person singular, for example. The affix /bVk-/ requires the VM, as we have seen, and, as for regular perfective forms of transitive verbs (see 5.6.2), the VM must metathesize with the initial consonant of the stem. In this case the initial consonant is the <u>b</u> of /bVk-/; as for the other <u>b</u>-initial bases, the consonant cluster <u>bm</u> resulting from the metathesis simplifies to <u>m</u>, giving <u>məktaut</u> and <u>məktutiy</u>. The derivation of the latter is as follows:

mV#bVk#tawt#iyV (third person singular perfective)

m#bVk#tawt#iyV	Vowel Deletion
bmVk#tawt#iyV	Metathesis
bmVktawtíyV	Stress Assignment
bmVktwtíy	Vowel Deletion
bməktwtíy	Reduction of Single Vowels
bməktutíy	Sonorant Syllabification
məktutíy	Cluster Simplification

In the stative forms, as expected, there is no VM; the stative affixes /-l-/, resultative, and /-alVl/, anticipative, attach to the base, which is marked either with /wV-/ or with /bVk-/. Here again the b of /bVk/ changes to w. The derivations for the resultative stative forms are as follows:

b-l-Vk-	w-l-V-	
w-l-Vk-		b to w
	wl-	Vowel Deletion
wlək-		Reduction of Single Vowels
ulək-	ul-	Sonorant Syllabification

The forms for the base /tawt/ are ulək*taut* and *ultaut*. The anticipative stative forms always use the /-alVl/ form of the affix (see 4.5.2). This form of the /wV-/ causative verb is quite regular: *otutall*. The form with /bVk-/ is *oktutall*, where *ok-* is the surface realization of /bVk-/ by the rules of b to w and subsequent reduction of *wV* to *o*.

6.2 Function of the Causative

The causative affixes normally serve as the surface manifestation of a higher verb CAUSE, following the analysis of McCawley 1968 and others. The difference between a sentence containing a causative verb and the related sentence with no causative affix on the verb is that the causative sentence must contain an Agent or Instrument NP in addition to whatever NP's were in the original sentence (but may be anaphorically deleted in the causative sentence). The added NP will be the subject when the causative verb is marked with either the progressive or perfective affixes--that is, in those cases where the verb affixation requires an Agent subject. It will not be the subject if the causative verb is ergative.

The following sentence is not causative:

(1) a Toki a məkar

mV#kar

VM awake

'Toki is awake.'

It can be made causative by adding a new subject and affixing the appropriate affix plus any other required marking on the verb; the original subject becomes the object. In the following sentence the causative verb is progressive:

(2) a Droteo a olkar er a Toki

wV#l #kar

caus prog awake

'Droteo is waking Toki up.'

6.3 Derivation of Causatives

The lexical entries for bases will have to show whether they can take /wV-/ or /bVk-/ or both. I shall discuss some of the patterns in the derivation of causatives from various other stems, first examining the bases which take only one of the affixes and then those which can take both.

6.3.1 Bases which take /wV-/. Bases which take only /wV-/ include some statives and intransitives, and some nouns. Some examples of stative bases, their forms with the VM (which may be metathesized) and their progressive causative forms are as follows:

/dak/ dmak 'together', oldak 'put together'

/kar/ məkar 'awake', olkar 'wake up' (transitive)

An example of the contrast in function between the verb marked only with the VM and with the causative affix is:

(3) aki mo dmak

aki mV#bo mV#dak

we future VM together

'We (exclusive) will be together.'

(4) aki mo oldak a bilam
mV#bo wV#l#dak bayul#amV
future caus prog together clothes-our
'We will put our clothes together.'

Examples of intransitive bases, their active and causative forms are now given. Causatives will be cited in the progressive form throughout this chapter, unless otherwise stated.

/luut/ lmuut 'return', olluut 'make someone return, give back'

/kerod/ kmered 'get off', olkered 'unload'

/rurt/ rəmurt 'run', orrurt 'make someone, something run'

The last example shows assimilation of the l of the progressive affix to the initial r of the stem; we encountered this phenomenon in Chapters IV and V. Some sentences which illustrate the above examples are the following:

(5) a ŋalək a mo lmuut
ŋalVk mV#bo mV#luut
child future VM return
'The child will return.'

(6) a Toki a mo olluut er a ŋalək
mV#bo wV#l #luut ŋalVk
future caus prog return child
'Toki will make the child return.'

(7) a Toki a mo olluut er a ʔoluʔəs
mV#bo wV#l #luut ʔo#luʔus
future caus prog return pencil
el mo er a ŋalək
mV#bo ŋalVk
VM go child
'Toki will return the pencil to the child.'

Sentence 7 contains an embedded sentence el mo er a ŋalək, literally 'going to the child'. This is the way a Direction NP is always marked in Palauan when the main verb is not a directional verb (see Josephs MS). Another pair of examples is the following:

(8) a Droteo a kmerəd er tiaŋ
mV#kerod tya
VM get off here
'Droteo gets off here.'

(9) a Droteo a olkerəd a klalo er a mlai
wV#l #kerod klalow mlay
caus prog get off thing canoe
'Droteo is unloading things from the canoe.'

Bases which are nouns can also have causative forms in a few cases, as the following example illustrates:

/ŋaok/ 'flute', olŋaok 'whistle (to someone)'

The following example has the causative verb from /ŋaok/ in the third person singular perfective form:

(10) a Droteo a mo ŋokiy a bilis

mV#bo wV# ŋaok #iyV bilis

future caus flute perf dog

'Droteo is going to whistle for the dog.'

There are some noun bases which also occur as intransitive verbs with the VM, and causatives can also be derived from such bases, for example:

/tuu/ 'entrance' (action), tmuu 'enter', oltuu 'insert'

/tobad/ 'exit' (action), tuobed 'go out', oltobed 'make someone go out, take something out'

Such verbs are illustrated in the following sentences:

(11) a Toki a tiluu er a blil

mV#t-il-uu blay#lV

VM enter (past) house-her

'Toki entered her house.'

(12) a Toki a ulɔltuu er a rɔʔad

w-il-V #l #tuu rV#ʔadi

caus (past) prog enter plu person

er a blil

blay#lV

house-her

'Toki made the men enter her house.'

The verbs in these sentences are marked with the past tense infix /-il-/. Sentence 12 contains both an Object, er a rɔʔad, and a Goal, er a blil, noun phrase.

There is a fairly small set of transitive verb bases which only occur with the causative affix /wV-/. Examples of such bases with their causative progressive forms are:

/reŋVs/ orreŋəs 'hear'

/diŋl/ oldiŋl 'visit'

/toir/ oltoir 'chase'

/sobal/ olsobəl 'save'

/ker/ olker 'call'

These function as regular transitive verbs, as the following sentence demonstrates:

(13) a Droteo a oltoir er a Toki

wV#l #toir

caus prog chase

'Droteo is chasing Toki.'

6.3.2 Bases which take /bVk-/. The alternative causative affix, /bVk-/, affixes to some nouns, statives and transitive bases. The examples cited are progressive forms of the causative verb, which are prefixed with omək-, as discussed in 6.1. Some examples of causative verbs derived from noun bases follow. It is unlikely that such verbs come from a higher verb CAUSE; the causative affix merely functions as an idiosyncratic verb marker in these cases.

/bar/ 'blanket', oməkbar 'cover with a blanket'

/youd/ 'lateness', oməkeoud 'delay'

/buʔi/ 'spouse', oməkbuʔ '(cause to) marry'

Many such noun bases allow other derived verbs although there is no consistent pattern. For example, oubuʔ, /ou#buʔi/, 'have a spouse, be married' and meoud, /mV#youd/, 'late' are derived from two of the bases cited above. In the forms derived from /youd/ 'lateness' the /y/ is manifested as e because of the following non-high vowel (see 3.7). The causative verb omekeoud 'delay (unintentionally)' contrasts with omekmeoud 'delay (intentionally)'. The latter is underlying /wV#mV#bVk#mV#youd/. The difference between intentional and unintentional causation is frequently marked morphologically, as we shall see, but this particular example of it is unusual since the VM is not normally used for this purpose.

Some regular transitive verbs are derived from noun bases, and in many cases a causative verb is also possible. The meaning of the causative differs slightly from that of the transitive verb; this is generally but not always predictable. Some examples are as follows:

/bayul/ 'clothing', omail 'clothe (someone)', omekbail 'clothe (someone who is resisting)'

/diki/ 'something to put things on to hold them steady', melik 'to wedge, hold something steady' omekdik 'put something on a dik'

/yidok/ 'dirt', idokl 'dirty', menidokl 'make something dirty (unintentionally)', omekidokl 'make something dirty (intentionally)'

/daŋob/ 'lid', mələŋəb 'to cover', oməkdaŋəb 'to cover (with something other than the regular cover)'

The connotation of resistance of the Object NP is a common interpretation of /bVk-/ verbs when another transitive verb can be formed from the same base, as in the case of /bayul/ 'clothe'; this interpretation could also cover the transitive verbs formed from /daŋob/ 'lid'. Some sentences with verbs from /bayul/ 'clothe' follow:

(14) a Toki a omail er a ŋələkel
mV#m #bayul ŋalVk#elV
VM prog clothe child-her
'Toki is dressing her child.'

(15) a Toki a oməkbail er a ŋələkel
wV#mV#bVk#bayul ŋalVk#elV
caus VM caus clothe child-her
'Toki is making her child get dressed.'

The transitive verbs derived from /diki/ are less predictable, but make the semantic distinction appropriate to the particular base. The base /yidok/ is even more unpredictable; the transitive verbs are formed not directly from the base, but from the anticipative stative form idokl, which does not appear to have anticipative stative meaning. The contrast between məŋidokl and oməkidokl is, again, that of intentional versus unintentional causation.

(16) a chalk a məŋidokl a bilem

mV#ŋ #yidok#Vl bayul#emV

VM prog dirty clothing-your

'The chalk is making your clothes dirty.'

(17) kau a oməkidokl a bilek

kaw wV#mV#bVk #yidok#Vl bayul#ekV

you (sing) caus VM caus dirty clothing-my

'You are making my clothes dirty (deliberately).'

In such cases we could say that sentences like 16 have an Instrument subject and sentences like 17 have an Agent subject.

Some stative bases which allow causative verbs to be formed with /bVk-/ are the following:

/dʔor/ dəʔor 'stand', oməkdəʔor 'build, make stand'

/siwa/ osiu 'joined', oməkəsiu 'compare, imitate'

/dakt/ mədakt 'afraid', oməkdakt 'frighten'

/riŋl/ məriŋəl 'hurt', omekriŋəl 'hurt' (transitive)

/wuŋil/ uŋil 'good', oməkuŋil 'heal'

Some example sentences follow.

(18) a ŋalək a dəʔor er a bebul a tebl

ŋalVk dʔor bebul tebl

child stand top table

'The child is standing on the table.'

(19) a Toki a omɔkdɔʔor er a ŋalɔk er a

wV #mV#bVk #dʔor ŋalVk

caus VM caus stand child

bebul a tebl

bebul tebl

top table

'Toki is making the child stand on the table.'

Some transitive bases can have causative forms with /bVk-/:

/kal/ 'eat', omɔka 'feed'

/ŋim/ 'drink', omɔŋim 'make someone drink'

In these cases the base begins with a velar consonant which deletes when /bVk-/ is affixed. Example sentences follow.

(20) a Droteo a mɔŋa er a kukau

mV#ŋ #kal kukawi

VM prog eat taro

'Droteo is eating the taro.'

(21) a Toki a omɔka er a Droteo er a

wV #mV#bVk #kal

caus VM caus eat

kukau

kukawi

taro

'Toki is feeding Droteo the taro.'

Droteo's eating of the taro in the causative sentence can

still be voluntary. Sentence 21 is the first example of a transitive sentence being causativized that we have met. The original subject, Droteo, is placed after the verb and marked with the preposition er.

Although transitive bases normally derive a causative verb with /bVk-/ rather than /wV-/, there is at least one example of the latter phenomenon, where the regular progressive form is used for intentional activity, and the causative form for unintentional activity:

/ʔubl/ mənubl 'pour', oləʔubl 'spill'

Where a transitive base allows both /wV-/ and /bVk-/ the contrast between the causative forms and the regular progressive form is not always predictable. For example, the following noun is also a transitive verb base and allows two causative forms:

/titʔ/ titəʔ 'wedge', məlitəʔ 'to wedge', oltitəʔ and omɛktitəʔ 'squeeze'

The differences in meaning between the progressive form məlitəʔ and each of the causative forms can be illustrated by the following sentences:

(22) a Droteo a millitəʔ er a kerrkar
m-il-V# l# titʔ kVrrkar
VM (past) prog wedge wood
'Droteo wedged the wood (put something underneath it to tilt it).'

(23) a Droteo a ulɘltitɘʔ er kɘmam
w-il-V# l# titʔ kVmam
caus (past) prog squeeze us (exc)
'Droteo squeezed in with us.'

(24) a Droteo a ulɘmɘktitɘʔ er kɘmam
w-il-V# mV#bVk#titʔ kVmam
caus (past) VM caus squeeze us
'Droteo squashed us.'

The contrast between 23 and 24 is a case of the distinction between causation resisted by the Object (24) and that not so resisted (23). This distinction and that between intentional or deliberate causation and unintentional causation are the most generally recurring interpretations of the contrast between /wV-/ and /bVk-/, or between a causative and regular transitive form, in those cases where the base allows one or both of these pairs of affixes.

6.4 Contrast of /wV-/ and /bVk-/

Verbs of feeling are often expressed in Palauan by means of a stative or intransitive verb followed by a rɘŋul, a rɘŋuk, etc. As was pointed out in 4.3, these are transformed from an underlying structure where a rɘŋul a X,'X's heart, spirit', is the subject. Some such verbs of feeling exhibit the distinction between /wV-/ and /bVk-/ as intentional versus unintentional causation. Some examples are:

/sebk/ swebək 'fly', olsebək, oməksebək

/deu/ dmeu 'happy', oldeu, oməkdeu

The idiomatic meaning of swebək a rəŋul is 'worried'. Some sentences using these verbs in causative and non-causative constructions follow.

(25) a rəŋul a Droteo a swebək
rəŋu#lV mV#sebk
heart-his VM fly
'Droteo is worried.' (literally: 'Droteo's heart is flying.')

(26) a Droteo a swebək a rəŋul
'Droteo is worried.'

(27) a Toki a olsebək er a rəŋul a Droteo
wV# l# sebk rəŋu#lV
caus prog fly heart-his
'Toki is worrying Droteo (unintentionally).'

(28) a Toki a oməksebək er a rəŋul a
wV# mV# bVk# sebk
caus VM caus fly
Droteo
'Toki is worrying Droteo (deliberately).'

(29) a rəŋul a Toki a dmeu
rəŋu#lV mV#deu
heart-her VM happy
'Toki is happy.'

(30) a Toki a dmeu a rəŋul

'Toki is happy.'

(31) a ŋələkel a oldeu er a rəŋul a Toki

ŋalVk#elV wV# l# deu reŋu#lV

child-her caus prog happy heart-her

'Her child makes Toki happy (unintentionally).'

(32) a ŋələkel a oməkdeu er a rəŋul a Toki

wV# mV#bVk# deu

caus VM caus happy

'Her child is cheering Toki up (making her happy deliberately).'

Another example of this distinction is found in the forms from the base /bsaw/ 'bend', which takes m- in the progressive rather than l- since it is b-initial, although the b deletes in many forms due to cluster simplification:

/bsaw/ smau 'bend' (intransitive), omsau, oməksau

(33) a kərrkar a smau

kVrrkar mV#bsaw

tree VM bend

'The tree bends.'

(34) a Droteo a omsau er a kərrkar

wV# m# bsaw kVrrkar

caus prog bend tree

'Droteo is bending the tree (unintentionally).'

(35) a Droteo a omɔksau er a kɔrrkar

wV# mV#bVk# bsaw

caus VM caus bend

'Droteo is bending the tree (intentionally, in such a way as to make it grow differently).'

The word omɔksau is also the word for 'train (animals,etc)'.

The other common interpretation of the distinction between /wV-/ and /bVk-/, resisting versus unresisting Object, can be illustrated with the base /sisb/ 'enter'.

/sisb/ soisb 'enter', olsisb, omɔksisb

The VM surfaces as o in soisb instead of the expected u. Sentences containing the non-causative and causative forms of this verb are the following:

(36) a ŋalɔk a mo soisb er a skuul er a klukuk

mV#bo mV#sisb skuul klukuk

future VM enter school tomorrow

'The child will enter school tomorrow.'

(37) a Toki a mo olsisb er a ŋalɔk er a skuul

wV# l# sisb

caus prog enter

'Toki will take the child to school (make him enter school).'

(38) a Toki a mo əməksisb er a ŋalək

wV# mV#bVk# sisb

caus VM caus enter

er a skuul

'Toki will take the child (who does not want to go) to school.'

Some less regular examples of the contrast between /wV-/ and /bVk-/ are the following:

/rayal/ mərael 'walk', orrael, əməkrael 'lead'

/tawt/ tmaut 'spear', oltaut, əməktaut 'aim'

The form orrael can be used to mean 'start'(an engine, etc) whereas əməkrael always means 'lead' (a person); orrael can also be used in this sense when the Object does not know that he is being taken anywhere. When əməkrael is used he knows where he is going but not how to get there. Some sentences illustrate this.

(39) a Droteo a mərael el mo er a stoaŋ

mV#rayal mV#bo stoaŋ

VM walk VM go store

'Droteo is walking to the store.'

(40) a Droteo a orrael er a Toki el mo

wV# l# rayal mV#bo

caus prog walk VM go

er a stoaŋ

'Droteo is leading Toki to the store (but she does not know it).'

(41) a Droteo a omɘkraeɪ er a Toki ɛl

wV# mV#bVk# rayal

caus VM caus walk

mo er a stoaŋ

mV#bo

VM go

'Droteo is leading Toki to the store (showing her the way).'

The intransitive form of /tawt/ means 'to spear' whereas the causative forms mean 'to aim' (with differences in accuracy and skill). This verb takes a Locative NP, er a ŋikɘl, in the following sentence:

(42) a Droteo a tilaut er a ŋikɘl

mV#t-il-awt ŋikVl

VM spear (past) fish

'Droteo speared the fish.'

The same Locative NP occurs when the verb is causative and the sentence also contains an Object:

(43) a Droteo a ulɘltaut er a bɘskɘlɘŋɘl

w-il-V# l# tawt biskaŋ#ɛlV

caus (past) prog aim spear-his

er a ŋikɘl

ŋikVl

fish

'Droteo aimed his spear at the (body of the) fish.'

(44) a Droteo a uləməktaut er a
w-il-V# mV#bVk# tawt
caus (past) VM caus aim
bəskələŋel er a ŋikəl
biskaŋ#elV ŋikVl
spear-his fish
'Droteo aimed his spear at the fish (the position the fish was expected to occupy by the time the spear would hit it).'

As in the case of the causatives <u>oməkeoud</u> and <u>oməkmeoud</u> from the noun base /youd/ 'lateness', other noun bases allow causative forms from both the base and a stative derived from the base. The base /ralm/ 'water' allows three causative verbs:

/ralm/ <u>bəralm</u> 'watery', <u>omralm</u>, <u>oməkralm</u>, <u>oməkbəralm</u>

Here the stative verb <u>bəralm</u> consists of /bV#ralm/; see 4.4 for discussion of the prefix /bV-/. The causative <u>omralm</u> is formed by affixing <u>wV-</u> plus the progressive affix to the base <u>bəralm</u>. The three causative verbs are used slightly differently, as the following sentences illustrate:

(45) a Toki a omralm a səlokl
wV# m# bV# ralm silok#Vl
caus prog stative water laundry
'Toki is rinsing the laundry.'

(46) a Droteo a omɔkralm ɛr a klɛŋɔis
wV# mV#bVk# ralm klVŋois
caus VM caus water cooked meat or fish

'Droteo is putting water in the klɛŋois.'

(47) a Droteo a omɔkberalm ɛr a
wV# mV#bVk# bV# ralm
caus VM caus stative water
klɛŋois

'Droteo is diluting the klɛŋois (putting more water in it).'

Here the exact meaning of the different causatives is somewhat idiosyncratic.

Generally the exact interpretation of causative verbs will depend on the meaning of the base and what kinds of distinctions must necessarily be made in the culture. There are some regularities, however, particularly the distinctions concerning the deliberateness of the action and whether or not the Object NP is resisting. Where the contrast between the two causative affixes involves the deliberateness of the action we could say that /wV-/ adds an Instrument subject to the original non-causative sentence whereas /bVk-/ adds an Agent. The other distinction, concerning whether or not the Object is resisting, would have to be accounted for simply by specifying the information in the lexical entries of the

bases which can take both affixes with this contrast in meaning. All the idiosyncratic interpretations which we have encountered will have to be dealt with in this way, also.

VII. RECIPROCALS

7.0 Introduction

There is only one reciprocal affix, /kai-/, with a variety of closely related uses. Its phonological shape is discussed in 7.1. I deal with the syntactic and semantic properties of reciprocal sentences in 7.2; they always involve a symmetric relation between the individuals designated by the subject NP. The succeeding sections are concerned with the different types of reciprocal sentences. I discuss those containing inherently symmetric predicates in 7.3. The more common use of the reciprocal affix with non-symmetric predicates is presented in 7.4. A third general category of reciprocal sentences, those involving comitative relations, is the subject of 7.5.

7.1 Shape of the Affix

Although the reciprocal affix surfaces in a variety of ways, they can all be accounted for by positing an underlying form /kai-/. The prefix attaches directly to a verb base, but certain other affixes may be present, as we shall see. It may surface as kai-, as in the following cases:

/ŋVsew/ 'help', kaiŋəseu 'help each other'

/siwekl/ 'meet', kaisiwekl 'meet each other'

Causative verbs marked with /wV-/ (see Chapter VI) normally have kai- in the reciprocal form. This is the only environment in which /wV-/ surfaces as wə- rather

than o-; the added prefix causes a resyllabification of the word. Some examples of bases which occur only with /wV-/, although not semantically causative (see 6.3.1), are the following:

/toir/ 'chase', kaiwətoir 'chase each other'

/diŋl/ 'visit', kaiwədiŋl 'visit each other'

The sequence kaiwə- may reduce to kau-; this is not predictable by the phonological rules presented in Chapter III, so it must be peculiar to this sequence of affixes. For some stems this reduction is optional:

/sobl/ 'save', kaiwəsobl, kausobl 'save each other'

For others it is obligatory:

/durokl/ 'send', kaudurokl 'send each other'

The reciprocal affix also precedes the other causative affix, /bVk-/; the b undergoes the b to w rule (see 6.1), and the kaiwVk- sequence reduces to kauk- by the same rule which reduces kaiwə- to kau-. Some example reciprocal forms for bases marked with /bVk-/ are the following:

/latk/ 'remember', omeklatk 'remind', kauklatk 'remind each other'

/dakt/ 'fear', omədakt 'frighten', kaukdakt 'frighten each other'

/rayal/ 'walk', oməkrael 'lead', kaukrael 'lead each other'

A large class of nouns allows the verbal prefix

/ou-/, which generally means 'have ____', although in many cases there are idiomatic extensions. This affix is not discussed in detail in the present work. The reciprocal forms of these verbs have a kau- initial sequence; this is derived by idiosyncratic reduction of underlying /kai#ou-/. Some examples of noun bases, their forms with /ou-/ and their reciprocal forms follow.

/reŋu/ 'heart, spirit', oureŋ 'wish for', kaureŋ 'long for each other'

/buʔi/ 'spouse', oubuʔ 'be married (to)', kaubuʔ 'be married to each other'

/ʔays/ 'news', ouʔais 'tell news', kauʔais 'tell each other the news'

/sVʔVley/ 'friend', ousəʔəlei 'be friend of', kausəʔəlei 'be friends'

Reciprocal verbs containing one of the causative affixes or /ou-/ are the only cases where the reciprocal affix is not the only affix present on the base. In all other cases the reciprocal affix attaches directly to the verb base and no other affixation is permitted. When the reciprocal affix is the only affix present on a base it normally undergoes vowel reduction. We saw in 3.3 that a sequence of two vowels when unstressed will reduce to the first of the sequence. This rule applies in the following cases:

/kimud/ 'cut (hair)', kakimd 'cut each other's hair'

/tomotm/ 'clear (ground)', katəmotəm 'clear (ground) for each other'

These two examples are unusual, however; normally the a produced by the rule of Cluster Reduction must then undergo the rule for reduction of single vowels, reducing to ə:

/luʔus/ 'write', kəluʔəs 'write to each other'

/latk/ 'remember', kəlatk 'remember each other'

/tuba/ 'spit', kətub 'spit on each other'

/dakt/ 'fear', kədakt 'fear each other'

/kal/ 'eat', kəkə 'eat each other'

In Chapters IV and V we encountered cases of vestigial reduplication, where a base must be completely or partially reduplicated before it can take a certain affix. The reciprocal affix also requires certain bases to reduplicate; this is an idiosyncratic property of the base in each case. Generally there is some reduplication in reciprocal verbs that maintain the ka- form of the prefix rather than reducing the a to ə. Some examples of reduplication in reciprocal verbs follow.

/wes/ 'see', kasoes 'see each other'

/boes/ 'shoot', kabeboes 'shoot each other'

/keri/ 'ask', kakərkər 'ask each other'

/suwob/ 'study, imitate', kasusuub or kəsuub 'imitate each other'

/tuʔei/ 'change', kaitutəʔei 'exchange'

The reciprocal forms of /suwob/ 'study, imitate' show that the reduplication is not always obligatory; kəsuub follows the more regular pattern. The reciprocal form of /tuʔei/ 'change' has kai- rather than ka-.

When the initial consonant of the base is ʔ the a of the prefix remains and the k assimilates to the ʔ:

/ʔelebod/ 'hit', ʔaʔəlebəd 'hit each other'

/ʔuyw/ 'read', ʔaʔuiw 'read to each other'

The assimilation rule does not seem to function for speakers from the north of Babeldaob; they would have kaʔəlebəd and kaʔuiw as output.

7.2 Properties of a Reciprocal Sentence

The reciprocal verb is interpreted as present progressive in most cases when there is no auxiliary in the sentence. The past tense stative auxiliary mle (see Chapter IV) is used for past progressives and mla for simple past tense:

(1) tə mle ʔaʔəlebəd
tir mle kai#ʔelebod
they past recip hit
'They were hitting each other.'

(2) tə mla ʔaʔəlebəd
tir mla kai#ʔelebod
they past recip hit
'They hit each other.'

In order for a sentence to contain the reciprocal

affix, it must have certain properties: the minimum requirements for all such sentences are that the subject must be plural or conjoined and the verb must have the logical property of being symmetric. The term 'symmetric' refers to a logical property of relations. A relation is a property that can only be assigned to two or more entities and not to just one. For example, tall does not express a relation in the following sentence:

(3) John and Mary are tall.

This is because tall can be predicated of both John and Mary separately:

(4) John is tall and Mary is tall.

On the other hand, related in the following sentence does express a relation:

(5) John and Mary are related.

It is unacceptable to predicate related of John and Mary separately:

(6) *John is related and Mary is related.

Furthermore, the relation expressed by related is symmetric. All relations are either symmetric, non-symmetric or asymmetric. A symmetric relation is one in which, loosely speaking, the order of the noun phrases can be reversed. For example, the following two sentences show that related to is symmetric:

(7) John is related to Mary.

(8) Mary is related to John.

If F symbolizes the relation and x and y symbolize the individuals between whom the relation holds, then a relation is symmetric if Fxy entails Fyx. Some examples of symmetric relations in English are be the same as, be married to, be close to. Relations which are logically asymmetric, where the falsity of Fyx can be predicted from the truth of Fxy, include be parent of, be south of.

Relations expressed by predicates in natural languages are more likely to be non-symmetric than either symmetric or asymmetric. A non-symmetric relation is one for which the truth value of Fyx cannot be predicted from the truth of Fxy. Examples of predicates expressing such relations are love, respect, help, hit and entertain. The following sentence is non-symmetric:

(9) John loves Mary.

However, love can be used to express a symmetric relation, as in the following sentences:

(10) John loves Mary and Mary loves John.

(11) John and Mary love each other.

Verbs will be marked in the lexicon as being either [+Symmetric] or [-Symmetric] if they express symmetric or asymmetric relations, respectively. Verbs which express non-symmetric relations will not be marked in the lexicon for the feature Symmetric. They can express symmetric relations, however, as in 11; therefore the feature [+Symmetric] can be added to their semantic

specification. The reciprocal affix in Palauan serves to make explicit a symmetric relation. The symmetry may be due to an inherent feature of the verb to which the affix is attached; I call such verbs 'inherently symmetric', or it may be due to an added feature, [+Symmetric]. The symmetric relation made explicit by the presence of kai- holds between the members of the subject class--that is, the individuals designated by the subject NP.

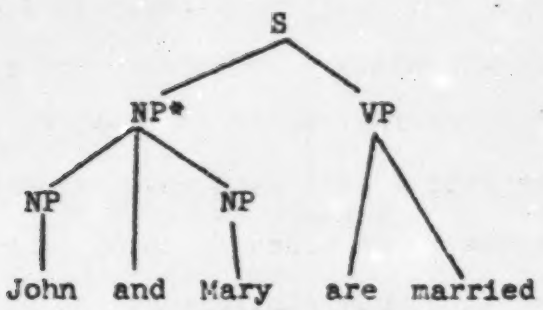
The only available previous analysis of symmetric relations that I know of is presented in Lakoff and Peters 1969. They deal only with the 'inherently symmetric' predicates, however, claiming that such verbs require a phrasally-conjoined subject. They propose a mechanism for allowing conjoined subjects in the deep structure of such sentences as 12.

(12) John and Mary are married (are husband and wife).

The notational device NP* is used in order that sentences like 12 not be derived from a sententially-conjoined underlying structure, as would underlie the following sentence:

(13) John is married and Mary is married.

Their tree structure for sentences such as 12 is approximately as follows:



This analysis involves introducing a new cateogory symbol, NP*. If non-symmetric predicates as well as the inherently symmetric ones were dealt with by Lakoff and Peters, they would have some difficulty in specifying the conditions under which NP* can occur, since NP* would not be obligatory for a large class of verbs. A simpler description results from considering the symmetry to be a feature of the verb.

My discussion of Palauan reciprocals will be restricted mainly to sentences where the subject class consists of two humans since this is the most common and typical use of the affix. The discussion could in principle be extended to cover symmetric relations between non-humans and among a larger subject class, where the relation ideally holds between each member of the class and every other member of the class, matched pairwise. Reciprocal sentences may be either syntactically intransitive or transitive; the latter type involves an additional complexity. The following discussion is divided into three sections according to the types of verbs which

are or can be [+Symmetric].

7.3 Inherently Symmetric Predicates

These can be divided into at least three semantic classes: identity relations, spatial relations and kinship and bond relations. Identity relations are expressed by predicates of similarity and difference. They may hold between two individuals absolutely, with no modification, or they may hold between two individuals with respect to some attribute, for example, have the same colour hair as, in contrast to be the same as. Some Palauan examples of unmodified identity relations are the following:

(14) a Droteo ma Toki a kaisisiu
kai#siwa
recip same
'Droteo and Toki are the same.'

(15) a mlimam a kakərous
mlay#mamV kai#krows
car-our recip different, separate
'Our cars are different; we have separate cars.'

(16) a mlimam a kakŋodəʔ
mlay#mamV kai#ŋodʔ
car-our recip different, strange
'Our cars are different; we have different kinds of car.'

Palauan has two verbs which translate into English as 'different': /ŋodʔ/ in the sense of 'strange, unfamiliar'

and /krows/ in the sense of 'separate'.

Inherently symmetric predicates do not necessarily require /kai-/; it adds no semantic information to the base. The following two sentences are synonymous:

(17) a Toki a ŋodəʔ er a Droteo
ŋodʔ

'Toki is different from Droteo.'

(18) a Toki ma Droteo a kakŋodəʔ
kai#ŋodʔ

'Toki and Droteo are different.'

The base /ŋodʔ/ idiosyncratically requires a k after the reciprocal affix. The difference between 17 and 18 is that 18 explicitly states the symmetric relation between Toki and Droteo whereas 17 is giving information about Toki, that she is different from Droteo in some respect. The two sentences would, then, have slightly different uses.

When another NP is added to sentences such as 14-16 a transitive structure results and the object NP must be interpreted in a certain way in relation to the subject class. It must consist of a possessed noun phrase; the possessor and the possessed noun must be plural and the possessor must be correferential with the subject. This is a general constraint which holds of almost all transitive reciprocal sentences in Palauan. Examples of transitive identity sentences follow.

(19) a Droteo ma Toki a kaisisiu a kləməŋətir
kai#siwa klVmaŋVt#irV
recip same height-their
'Droteo and Toki are the same height.'

(20) a Droteo ma Toki a kakərous a bləkərədəlir
kai#krows blVkradVl#irV
recip different character-their
'Droteo and Toki are different in character.'

(21) aki kakŋodəʔ a mlimam
aki kai#ŋodʔ mlay#mamV
we (exc) recip different car-our
'We have different kinds of car.'

In 20 the symmetric relation holds between Toki and Droteo; the relation might be paraphrased in English as have a different character from. This is a more complicated relation than simply be different from.

Another class of inherently symmetric predicates involves spatial relations between entities. If A is close to B, for example, then B must be close to A. Some example sentences with the bases /keed/ 'close' and /ʔroyd/ 'far' follow.

(22) a tebl a kaiwəkeed
kai#wV# keed
recip caus close
'The tables are close together.'

(23) a blai a ʔaʔəroid

blay kai#ʔroyd

house recip far

'The houses are far apart.'

The base /keed/ idiosyncratically requires the causative affix /wV-/ in the reciprocal form. Normally it requires only the VM; the following sentence contains /keed/ without the reciprocal affix:

(24) a blimam a kmeed er a blil a Toki

blay#mamV mV#keed blay#lV

house-our VM close house-her

'Our house is close to Toki's house.'

Since /keed/ is an inherently symmetric verb no semantic information is added by /kai-/ although sentences containing it have a slightly different use from those which do not, as we have seen. Sentence 24 gives information about our house rather than stating a symmetric relation between our house and Toki's house.

The third class of inherently symmetric predicates consists of terms used to express kinship and other relations among individuals. They are all derived from nouns by means of the affix /ou-/ (see 6.1). The following are examples of such verbs without the reciprocal affix:

(25) a Toki a oubu? er a Droteo

ou#bu?i

have spouse

'Toki is married to Droteo.'

(26) a Droteo a ouŋalək er a Toki

ou#ŋalVk

have child

'Toki is Droteo's child.'

Examples where such verbs are marked with /kai-/ in order to state a symmetric relation between the people are now given.

(27) a Droteo ma Toki a kaubu?

kai# ou# bu?i

recip have spouse

'Droteo and Toki are married.'

(28) a Droteo ma Toki a kausə?əlei

kai# ou# sV?Vley

recip have friend

'Droteo and Toki are friends.'

(29) aki kau?ad

aki kai# ou# ?adi

we (exc) recip have person

'We are related.'

(30) tə kauŋalək

tir kai# ou# ŋalVk

they recip have child

'They are mother and child.'

In 30 be related as mother and child is a symmetric predicate although be mother of or be child of are not.

7.4 Non-symmetric Predicates

For most transitive verbs a symmetric relation may be expressed even though this is not normally the way the verb is used. In such cases the reciprocal affix has more information value than when it occurs on inherently symmetric predicates. Some examples are now given.

(31) a Droteo ma Toki a kədakt

kai#dakt

recip fear

'Droteo and Toki are afraid of each other.'

(32) aki kakŋit

aki kai#kŋit

we (exc) recip bad

'We hate each other.'

(33) a mlai a mla kaisiwekl

mlay mla kai#siwekl

car past recip meet, crash

'The cars crashed (into each other).'

(34) aki kaiŋəseu

aki kai#ŋVsew

we (exc) recip help

'We are helping each other.'

(35) a Droteo ma Toki a katəkoi

kai#tVkoy

recip talk

'Droteo and Toki are talking to each other.'

(36) a Droteo ma Toki a kəluʔəs

kai#luʔus

recip write

'Droteo and Toki write to each other.'

There are no restrictions on the case of the NP's between which the symmetric relation holds. For example, the regular transitive sentence related to 36 has Toki as a Direction NP:

(37) a Droteo a məluʔəs el mo er a Toki

mV#l #luʔus mV#bo

VM prog write VM go

'Droteo is writing to Toki.'

The embedded sentence el mo er a Toki 'going to Toki' shows that the sentence contains a Direction NP.

Non-symmetric predicates can also occur in transitive reciprocal sentences; again the object must be a possessed NP and the possessor must be correferential with the subject. Some examples follow.

(38) aki mle kasoes a ʔuuŋam
aki mle kai#wes ʔuu#amV
we (exc) recip see shadow-our
'We could see each other's shadow.'

(39) a Droteo ma Toki a kəka a kəllir
kai#kal kal#Vl#irV
recip eat food-their
'Droteo and Toki are eating each other's food.'

(40) aki mla kəŋatəʔ a mlimam
aki mla kai#ŋataʔ mlay#mamV
we (exc) past recip clean car-our
'We cleaned each other's cars.'

(41) a Droteo ma Toki a ʔaʔuiw a hoŋ er tir
kai#ʔuyw hoŋ tir
recip read book them
'Droteo and Toki are reading each other's books.'

The phrase hoŋ er tir in 41 exhibits the pattern for possession of borrowed words (see Josephs MS) rather than the regular pattern of suffixation.

In 38-41 the possessor in the object NP is coreferential with the subject. Sentence 39 could be given an English paraphrase as follows:

(42) Droteo is eating Toki's food, and Toki is eating Droteo's food.

Here again the symmetric relation holds between Droteo and Toki, but the relation is more complicated than that

in an intransitive reciprocal sentence:

(43) a Droteo ma Toki a ʔaʔəlebəd
kai#ʔelebod
recip hit

'Droteo and Toki are hitting each other.'

The symmetric relation in 43 is hit whereas the symmetric relation in 39 is eat the food of. This is a reciprocal relation which in Palauan is expressed with a transitive sentence. The other examples of such relations in 38-41 are, respectively, see the shadow of, clean the car of, and read the book of. The interpretation of transitive reciprocal sentences containing non-symmetric predicates is parallel to the interpretation of such sentences containing inherently symmetric predicates (19-21).

7.5 Comitative Relations

Lakoff and Peters analyze English sentences containing a Comitative NP as having an underlying structure with a conjoined subject (NP*). For example, the following three sentences would have the same deep structure:

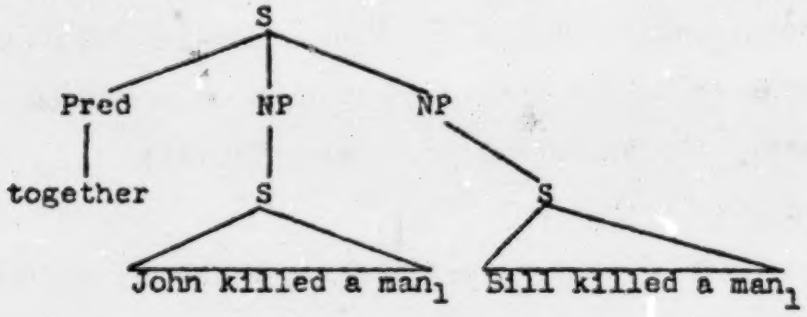
(44) John killed a man with Bill.

(45) John and Bill killed a man (together).

(46) Bill killed a man with John.

Sentences 44 and 46 are synonymous although they will have different uses depending on whether one of the participants is considered to be subordinate in some way (for example, by being an accomplice) to the other. This synonymy is

evidence that 44-46 contain a symmetric relation. It is not, however, expressed by the verb kill, or kill a man; it is due to the comitative relation between John and Bill. They killed a man together. The analysis of 44 could include with Bill as an NP in the Comitative case relation to the verb (Fillmore 1968:81-3), or the inherently symmetric predicate together could be treated as a higher verb. I adopt the latter analysis since it allows a consistent treatment of the feature [+Symmetric] as a property of verbs. The phrase marker for sentences 44-46 will be as follows:



Palauan has a verb /dak/ 'together', which can be used to express comitative relations symmetrically, for example:

(47) a Droteo ma Toki a dmak el mo er a
mV#dak mV#bo
VM together VM go
stoaŋ
store
'Droteo and Toki are going to the store together.'

Here /dak/ 'together' is the higher verb and /bɔ/ 'go' is in an embedded sentence.

In addition, Palauan allows the use of /kai-/ in such comitative sentences. This may be an innovative pattern, an extended use of the affix, since it only seems to be acceptable for some verb bases, and speakers seem to vary in their judgments of acceptability of such sentences. The symmetry of the predicate together can be made explicit by adding the reciprocal affix /kai-/ to the verb base. There are three different types of comitative sentences which allow /kai-/. Some involve quite constrained uses of the affix and have very specific semantic interpretations.

In the following sentences /kai-/ is used; it may connote some mutual effect of the activity on the members of the subject class.

(48) a Droteo ma Toki a ʔaʔuiw
kai#ʔuyw
recip read
'Droteo and Toki are reading together.'

(49) aki mle ʔaʔiwayw
aki mle kai#ʔiwayw
we past recip sleep
'We were asleep.'

(50) te mle kaiderurt
tir mle kai#rurt
they past recip run
'They were running together.'

In the reciprocal form of /rurt/ 'run' an extra syllable, de, is idiosyncratically added to the base. When such sentences are expressed without making the symmetry explicit the Comitative NP belongs in an embedded sentence:

(51) a Droteo a mənuiw el obəŋkel a Toki
mV#ŋ ʔuyw wVba#elV
VM prog read accompaniment-his
'Droteo is reading with Toki.'

For the analysis of the embedded sentence, see Josephs MS. This sentence can have a wider interpretation than the equivalent sentence containing /kai-/ (48); the former can be used when the two individuals are reading the same thing at the same time whereas 48 can only be used when they are reading different things at the same time.

A second use of the reciprocal affix involves the presupposition of the speaker that there is a comitative relation between the members of the subject class although the affix occurs on a verb expressing an asymmetric relation, for example:

(52) tə kaiwətoir
tir kai#wV#toir
they recip caus chase
'They are chasing each other.' (Although in fact only one is chasing the other, they are jointly involved in the activity of chasing.)

(53) tə mla ʔaʔətakl
tir mla kai#ʔVtakl
they past recip take out
'They took each other out.' (One took the other out.)

(54) tə kausisəʔakl a təkoy er a Belau
tir kai#wV# sisʔakl tVkoy Belau
recip caus teach language Palau
'They are teaching each other Palauan.' (One is teaching Palauan to the other.)

Sentences such as these are typically used as answers to questions such as 'What are they doing?' where the questioner presupposes that they are together. If the answerer also shares this belief then he can reply using /kai-/ even though the people under discussion are involved in an asymmetric relation. In 52, for example, the speaker may not know who is chasing who, or it may be unnecessary to specify this for the purpose of answering the question. Sentence 54 is a transitive reciprocal sentence, but does not fit the pattern of those already discussed. The object NP, a təkoy er a Belau, is not possessed. The relation

teaching Palauan to is asymmetric in this sentence although the presupposed relation between the members of the subject class is that they are together; the symmetry of this relation is what is made explicit by /kai-/.

A third use of /kai-/ where a comitative relation is involved is in a certain narrowly constrained type of transitive sentence. Some examples follow.

(55) a Droteo ma Toki a kaiwəʔar a bəras
kai# wV# ʔara bVras
recip caus buy rice
'Droteo and Toki are buying rice (for themselves, respectively) together.'

(56) a rəʔad a mla kəŋatəʔ a mlirir
rV#ʔadi mla kai#ŋataʔ mlay#rirV
plu person past recip clean car-their
'The men cleaned their (respective) cars together.'

The symmetric relation made explicit by /kai-/ is the comitative relation between the members of the subject class in these sentences. The object in both sentences contains a possessor NP although it is not stated in 55. The possessor must be correferential with the subject, as we observed for regular transitive reciprocal sentences. That this is necessary can be shown by considering the unacceptability of such sentences as the following:

(57) *a Droteo ma Toki a kəŋatəʔ a mlik
'Droteo and Toki are cleaning my car together.'

Neither can mlirir in 56 be interpreted as 'their jointly-owned (singular) car'. The relations clean the car of and buy rice for are not symmetric in these cases, but reflexive or 'respective'--that is, each man cleans his own car in 56 and Droteo and Toki each buy their own rice in 55. The symmetry in these sentences is that of the higher predicate together. Sentences 55 and 56 are ambiguous, however; they may also be interpreted as containing the symmetric relations clean the car of and buy rice for. The gloss for 56 following the latter interpretation would be 'The men cleaned each other's cars.'

There is a further use which /kai-/ has which is related to its function in comitative sentences. It can be used to express a polite command or suggestion, in the same way as English sentences like the following:

(58) Let's take our medicine.

In Palauan, the reciprocal affix seems to surface as ka- in such sentences; it affixes to the imperative form of the verb. The prefix on imperative verbs is a reduced form of /ʔomo-/, the second person singular of the set of pronominal prefixes mentioned in Chapter V as occurring in conditional clauses and topicalized sentences. The prefix usually occurs as mo- or m- in imperative verbs; when the base begins with b the sequence mb- reduces to b-. Some example sentences follow.

(59) kamolim a kar

kai# ʔomo# l# ŋim karu

recip imper prog drink medicine

'Let's take your medicine.'

(60) kabəskak a ʔoles

kai# ʔomo# bes# akV ʔo#les

recip imper give perf (1st sing) knife

'Let's try a knife; give me a knife.'

(61) kamorael

kai# ʔomo# rayal

recip imper walk

'Let's try to walk.' (said to an infant or invalid, for example)

In these sentences it appears that the speaker is explicitly putting himself into a comitative relation with the addressee by the use of /kai-/ in order to minimize or underplay the asymmetric nature of the actual relation.

To summarize, there are a variety of symmetric relations which can be made explicitly so in Palauan with the use of the reciprocal prefix /kai-/. These include relations expressed by inherently symmetric predicates such as be the same as, symmetric relations expressed by non-symmetric predicates such as write to, and comitative relations due to the symmetric higher predicate together.

VIII. CONCLUSION

In this dissertation I have attempted a relatively thorough investigation of most of the verb affixes of Palauan. I have been concerned with their phonological shape (since many are idiosyncratic in this respect), and with their syntactic and semantic functions. Many of my conclusions are tentative, and a great deal more work needs to be done on both the phonology and the syntax of Palauan. I hope that the present work will guide other linguists to unsolved problems where further investigation now seems fruitful. I shall now summarize the main findings of each chapter and the most important remaining problems.

It was necessary to examine the phonology in order to find principles for recognizing different occurrences of the same morpheme. There were two aspects to this examination: consideration of the underlying forms of the morphemes, specified by the morpheme structure rules, and consideration of the ways in which the underlying forms are altered through the application of phonological rules. We saw that the underlying forms of Palauan are of quite varied shape; much of the lexicon has been restructured through the addition of rules of vowel reduction and deletion and ŋ epenthesis. I posited underlying vowels of indeterminate value in cases where it is necessary to posit a vowel but there is no alternant in which it is

stressed. The underlying forms for a larger sample of the lexicon need to be established in order to test my hypotheses regarding the various indeterminacies that I have discussed, for example those cases where a surface vowel could be interpreted as an underlying vowel or glide.

We saw the phonological rules to be complex, altering an underlying form a great deal. The complexity is mainly in the reduction and deletion of unstressed vowels, so that it is necessary to examine a number of alternants in order to deduce the underlying form of a morpheme. The phonological rules presented in Chapter III are rather incomplete and informal although I believe that the processes posited are well motivated in order to account, for example, for the various vowel alternations and for the surfacing of /y/ and /w/ as non-low vowels. More rules will obviously have to be added for a fuller account. Probably processes presented here as one rule, for example Vowel Deletion, will sometimes turn out to be more than one formal rule.

In the discussion of the affixes I have given most attention to the generalizations of which I am relatively certain. I have given very little attention to those affixes which will need further investigation in order to accurately describe their function, and to those alternants which are least phonologically regular.

In Chapter IV we saw that some verbs are inherently

stative; of these, some can occur unaffixed whereas others require the verb marker /mV-/ or the relatively rare prefix /bV-/. Other stative verbs are formed by affixing one of the productive stative affixes. The two allomorphs of the anticipative stative affix, /-Vl/ and /-alVl/, cause some interesting phonological phenomena which have not been described before. Verbs marked with /-Vl/ are the only alternants of CVCVC bases in which the second vowel of the base surfaces. It seems that /-Vl/ is becoming less common, although this impression needs empirical support. I predict that /-alVl/ will eventually displace /-Vl/, hence changing the CVCVC underlying forms to CVCC since there will no longer be any alternant in which the second vowel occurs. The affixes /bVkV-/ and /sVkV-/ have been glossed as 'abilitative' and 'habitual' respectively, although I have found them to contrast very infrequently. Further investigation is necessary to establish whether in fact they are different affixes to all speakers, or whether they are merging as one.

The variety of shapes which the most common verb affix in Palauan, the verb marker /mV-/, assumes are explained in Chapter V. Identifying the various phonological forms of this affix is an important step in understanding Palauan verb morphology; previous linguists have not recognized that all the 'allomorphs' can be related by phonological rules: metathesis and denasalization of the m.

My explanation of the o- prefix which occurs on a small set of bases as a form of /mV-/ is tentative, however. Conceivably, this is a different affix, but its syntactic function is identical to that of the VM. The progressive and perfective (third person singular) affixes are phonologically most irregular. For both, we need to posit more than one form which is in the lexicon, and not produced by phonological rules. The progressive affix was probably *n- at some stage, and the sound change of n to l has caused the present alternants to arise. The perfective affix similarly requires historical considerations in order to explain its present shapes of /-iyV/ and /-rV/. Except in an ergative sentence, a transitive verb must take either the progressive or perfective marker; this fact enables us to make generalizations about active transitive sentences which have not been possible previously.

I am much less certain of how to analyze the perfective affix /-ú/ and the inchoative affix /-á/. It is odd that they seem to require stress, and their exact functions will not be clear without further research on their use.

As we saw in Chapter VI, the two causative affixes are /wV-/ and /bVk-/. We found that, although they do not normally contrast on one base, in several cases they do. The contrast results in two main differences in meaning: intentional versus unintentional causation, and

resistance or lack of it from the Object NP. Further investigation should allow more explanation of this contrast and how it might have arisen. In many such difficult areas I suspect that research with a wider variety of informants would establish how systematic a particular contrast is. In Chapter VI it was necessary to extend the rule changing m to w, previously posited as applying only to the VM; a b to w rule seems to be necessary to account for some alternations of the /bVk-/ affix. Further work may show that the changes from m to w and b to w can be stated as one rule.

The reciprocal affix is less problematic than most of the others with regard both to its phonological form and to its function. We saw in Chapter VII that the function of the reciprocal affix is to make explicit a symmetric relation between the individuals designated by the subject NP. This analysis is by no means restricted to Palauan; it could be extended to explain the semantic function of reciprocal marking in other languages. A mystery which arises in the examination of reciprocal verbs as well as elsewhere in the verb morphology of Palauan is why certain bases have to be reduplicated (fully or partially) before certain affixes are added. Reduplication is a fairly common process in the verb morphology of many Austronesian languages. For example, in Chamorro it indicates intensification, continuative aspect and nomin-

alization (Topping, personal communication). This is one of the many puzzles in Palauan which cannot be solved until we know what languages are its closest relatives; we might then be able to deduce the function of reduplication at an earlier stage of Palauan.

Loosely speaking, I regard Palauan as having an Indonesian-type base structure, with many CVCVC underlying forms, remnants of processes such as nasal substitution and certain syntactic mechanisms such as the ligature el. However, it has been in Micronesia and isolated from other Indonesian languages for a long time, and is unrecognizable as an Indonesian language with respect to its sound system, many of its canonical forms, and the extent to which sound changes have obscured regular correspondences. Some aspects, such as the pronominal perfective marking, are characteristic of Micronesian languages. Palauan has undergone a great deal of independent development. Much further work, both synchronic and diachronic, will be necessary in order to establish just how much of Palauan grammar has an Indonesian source, how much is from Micronesian influence, and how much is independent development. In time we may also know which of the Indonesian languages are its closest relatives and what the source of the Micronesian influence is.

APPENDIX. GLOSSARY OF UNDERLYING FORMS

The following verb bases are regular with respect to the phonological rules discussed in Chapter III. They are almost all transitive bases; transitive bases have greater possibilities of affixation than intransitive or stative bases. The anticipative stative form with /-Vl/ (see Chapter IV) is possible only for transitive bases, and this affix allows a vowel in the final syllable of the underlying form to surface. Only bases which allow the conservative form of the anticipative affix, /-Vl/, are cited in the following list. Almost all these bases are disyllabic, of CVCVC or CVCV shape. Any irregular forms are noted.

/bayul/ 'clothe'

/kal/ 'eat', nəka ergative, məŋa progressive

/rayal/ 'walk'

/tamat/ 'straighten'

/ŋimat/ 'bail'

/boes/ 'shoot', beakl anticipative stative

/duba/ 'poison'

/tuba/ 'spit'

/ŋim/ 'drink', ilumel anticipative stative, ŋilmiy perfective (third singular)

/ruwol/ 'make'

/rasim/ 'sew'

/sesob/ 'burn'

/ŋataʔ/ 'clean'

/ʔatu/ 'smoke'

/kemod/ 'mend'

/reŋod/ 'tie'

/leʔot/ 'tie'

/kimud/ 'cut (hair)'

/ŋetom/ 'lick'

/luʔus/ 'write'

/didi/ 'walk on'

/leŋi/ 'borrow'

/suwob/ 'study, imitate'

/buruʔ/ 'spear'

/diki/ 'wedge'

/silok/ 'wash'

/ŋasu/ 'extract'

/tibi/ 'organize'

/daŋob/ 'cover'

/sawеʔ/ 'pick (nuts etc)'

/ramu/ 'mix (with hands)'

/dasaʔ/ 'chop'

/tŋakil/ 'give money (for social reasons)'

/loʔid/ 'break (string etc)'

/rutaʔ/ 'touch (with hands)'

/radi/ 'pick (flowers etc)'

/sibu/ 'plough'

/subaʔ/ 'destroy'

/kiwot/ 'cut (grass etc)'

/ʔuyat/ 'put coconut milk on'

/ʔiwtokil/ 'twist'

/ʔelebod/ 'hit'

/kerod/ 'get off'

/wes/ 'see', osoŋəl anticipative stative, məsa perfective (third singular)

If a verb lacks an anticipative stative form with /-Vl/ there is no basis for positing an underlying vowel in the final syllable, and an underlying final consonant cluster will arise. This will happen when a base takes only the /-alVl/ form of the anticipative stative affix, or when the verb does not have an anticipative form at all. Intransitives and statives do not normally take this affix. I posit underlying monosyllabic bases containing consonant clusters for those verbs which do not alternate in such a way as to bring an underlying second syllable vowel to the surface. Some examples follow.

/brikd/ 'hang'

/briyd/ 'scatter'

/tuŋl/ 'smell'

/tawt/ 'spear'

/kiys/ 'dig'

/ʔubl/ 'pour'

/titʔ/ 'wedge'

/ʔuyw/ 'read'

/tikm/ 'fill, stuff'

/rurt/ 'run'

/laŋl/ 'cry'

/dʔor/ 'stand'

/tobd/ 'go out'

/sisb/ 'enter'

/klukl/ 'cough'

/dakt/ 'fear'

/latk/ 'remember'

/timl/ 'slow'

/riŋl/ 'hurt, difficult'

/ŋodʔ/ 'different'

/dʔudʔ/ 'dirty'

/sawl/ 'tired'

/ʔarm/ 'be in hardship'

/ʔbeʔb/ 'upside down'

/sebk/ 'fly'

/rebt/ 'fall'

/kyoŋl/ 'dirty'

/dŋarʔ/ 'right side up'

/kryor/ 'unfortunate'

/kryos/ 'precious'

/krows/ 'different'

/ʔroyd/ 'far'

/kyald/ 'hot'

The majority of Palauan verb bases are monosyllabic or disyllabic. However, there are some consisting of more than two syllables whose underlying form is not transparent, either because the surface forms contain several schwas, and it is impossible to tell at this stage which are underlying vowels and which are epenthetic, or because the surface forms contain unreduced unstressed vowels, and there are no alternations to support analyzing them as underlying glides or as vowels which idiosyncratically do not reduce. An example of the former type of indeterminacy is presented by the form kərəkíklə 'careful'. In order that the stress in this form be predictable by the stress assignment rule, it is necessary to posit a vowel between the final consonants; there is no underlying final vowel since the possessed form of the related noun klərəkiklə 'care' is klərəkəklek. Both of the schwas in the first two syllables of kərəkiklə could be unstressed, reduced vowels, or one of them could be epenthetic. The underlying form in this case could be any of the following, consistent with the phonological analysis presented in this work: /kVrVkikVl/, /krVkikVl/ or /kVrkikVl/.

An example of the second type of indeterminacy mentioned above is the base form of məʔiwáyəwə 'sleep'. The stress placement leads us to postulate a vowel either finally or between the final consonants, and the unreduced i leads us to suspect an underlying y. Following this

analysis, we would have to posit a vowel between the ʔ and the y in order that the underlying representation not contain the initial cluster ʔyw, unattested elsewhere in Palauan. The underlying form could then be /ʔVywayVw/ or /ʔVywaywV/, or the first syllable could contain an underlying i which idiosyncratically does not reduce to ə: /ʔiwayVw/ or /ʔiwaywV/. The underlying form posited in this work is /ʔiwayw/; this assumes that the stress is idiosyncratically not assigned to the penultimate vowel.

The two examples just discussed and those to be cited demonstrate that the phonological analysis presented in Chapters II and III does not apply without exception to all Palauan verbs. There is a sizeable class of verbs (particularly statives) which require further investigation. They may contain fossilized affixes or vestiges of processes such as reduplication which render them exceptional to some phonological rules. In the case of the schwas whose source is unknown, it is possible that different speakers may have different underlying forms. The explanation for such aberrant forms will hopefully be offered in the course of further work on Palauan phonology. The surface form and one possible underlying representation is given for each of the following irregular verbs:

/klVbokVl/ klə́bókle 'beautiful'

/kekVrei/ kekərə́i 'small'

/dVŋʔokVl/ dəŋəʔóklə 'sit'

/wVtubwaʔV/ otubuáʔ 'kneel'

/ʔeleleu/ ʔeleléu 'pale'

/buboŋV/ bubóŋ 'senile'

/ʔaʔau/ ʔaʔáu 'dried up'

/bulisV/ bebulís 'crazy'

/ʔoʔodV/ bəʔoʔód 'fragrant'

/ʔitakVl/ məʔitáklə 'sing'

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_____. MS c. Derivation of 'goal' forms.

_____. MS d. Letter to Fr. Felix Yaoch.

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